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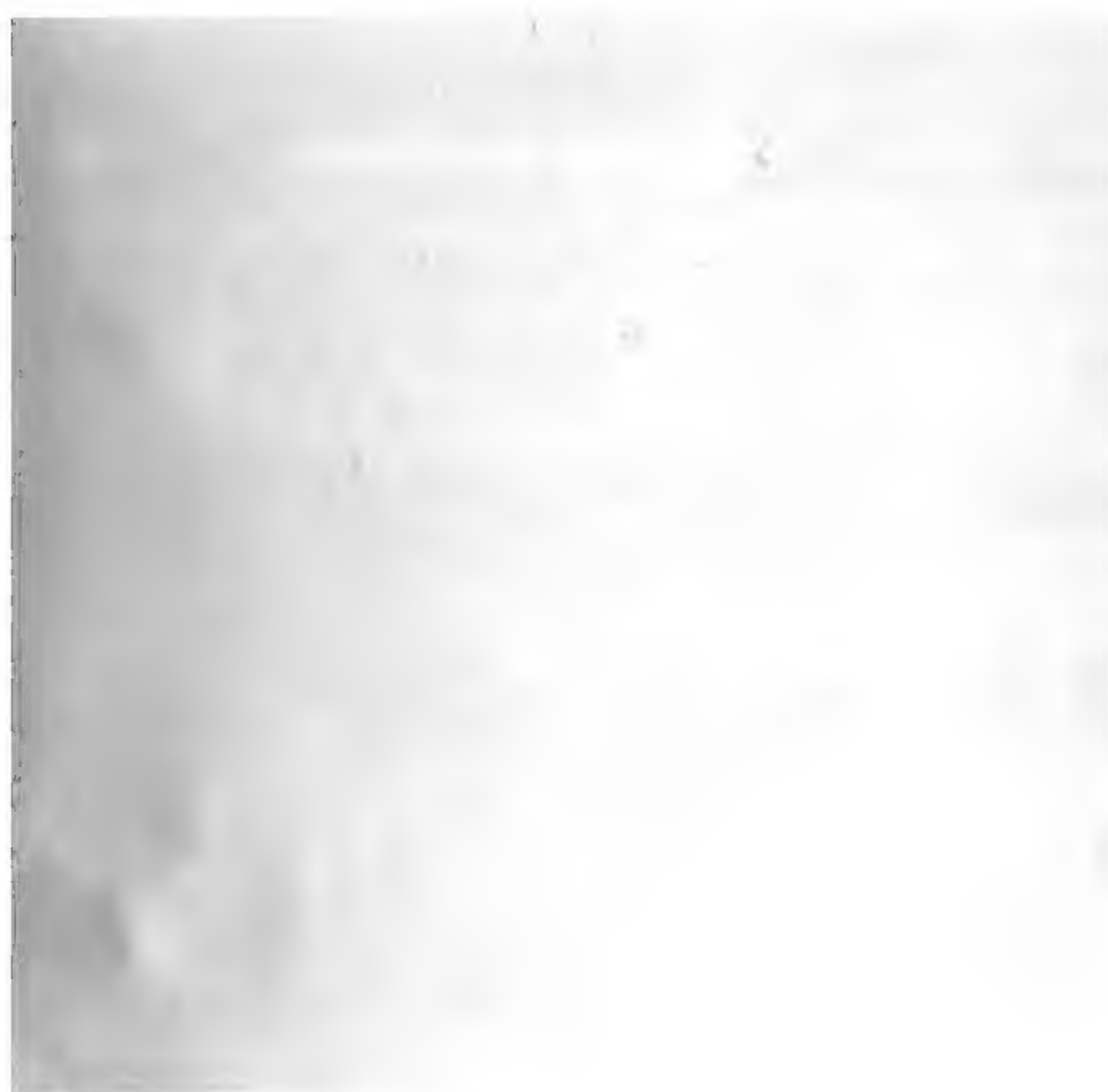
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W. F. FORD







PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.

EDITED BY



THE GENERAL SECRETARY.



JANUARY to DECEMBER,
1868.



CALCUTTA:

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1868.

40

CONTENTS.

	<i>Page</i>
Proceedings for January, 1868,	1
List of Sanscrit MSS. purchased,	51
List of Members for 1867,	51
Proceedings for February, 1868,	59
Do. for March, 1868,	79
Do. for April, 1868,	105
Do. for May, 1868,	123
Do. for June, 1868,	137
Do. for July, 1868,	159
Do. for August, 1868,	181
Statement of Accounts for 1867,	207
Proceedings for September, 1868,	207
Do. for October, 1868,	227
Do. for November, 1868,	249
Do. for December, 1868,	260
List of Papers received. <i>App. I.</i>	
„ of Donations. <i>App. II.</i>	

LIST OF PLATES.

- Plate No. I., issued in *May*, for p. 116.
Plate No. II., issued in *June*, for p. 152.
Plate No. III., issued in *August*, for p. 185.
Plate No. IV., issued in *September*, for p. 212.
Plate No. V., issued in *September*, for p. 218.
-

ERRATA.

- Page 66, foot note for *Hetewopodous* read *Heteropodous*.
„ „ for *Macgillioragiüdæ* read *Macgillivrayiidæ*.
„ „ for *Simesigera Dbil* read *Sinusigera*. *D'Orb.*
„ 126, line 25, read E. Buck, for E. Busk.
„ 203, line 4 from below, read *Pultusk*, for *Pultush*.
„ —, line 10 from below, read *cord*, for *end*.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JANUARY, 1868.

The Annual General meeting of the Asiatic Society of Bengal was held on Wednesday the 15th January, 1868.

Dr. Fayrer, President, in the chair.

The Secretary read the Council's report for the past year.

ANNUAL REPORT.

In reviewing the progress of the Society's affairs during the past year, the Council feel that they are justified in congratulating the Society on its present ameliorated position. The financial condition of the Society is, indeed, not yet so satisfactory as could be desired; but the heavy debts brought to the notice of the Society at the close of 1866, have been greatly reduced on the one hand; and on the other, strict economy and an income beyond what had been anticipated, have placed the Society in a position better than that which they held at the beginning of the year by not less than 4400 rupees. They feel that they may now express a confident hope that by continuing in a similar course of rigid economy for another year, they may be able to rescue the Society from debt, and to recommend a more liberal expenditure than they now feel justified in incurring, both on the Library and Publications.

The member list, which accompanies this report, shews a considerable increase on the previous year. The Society has lost 5 ordinary members by death, and 20 by resignation, making a total of 25; while not fewer than 54 new members have joined the Society, making a net increase of 29. The paying members have increased by 14, the

absent by 15. Two members whose names had been struck off from the list by mistake, have been re-instated at their own desire.

The following comparative numerical abstract of the member list for the last 10 years affords a convincing proof of the steady increase in the prosperity of the Society.

	Paying.	Absent.	Total.
1858,.....	193	40	233
1859,.....	135	45	180
1860,.....	195	47	242
1861,.....	225	55	281
1862,.....	229	82	311
1863,.....	276	79	355
1864,.....	288	92	380
1865,.....	267	109	376
1866,.....	293	94	387
1867,.....	307	109	416

Of the Ordinary members of the Society, the Council have to regret the decease of General Sir J. B. Hearsay, Captain A. R. Fuller, Director of Public Instruction in the Panjab; Lieutenant-Colonel Short of the Bengal Engineers; the Honorable Pandit Shambhunatha, the first native of this country who has ever occupied the exalted position of Judge of the High Court of Bengal; and Babu Jadavakrishna Singha, for some years an active member of the Society, as Vice-President, and as a member of its Council, and of the Philological Committee.

Of the Honorary members, two eminent names are on the obituary of last year; two others must also be noticed, which should have appeared on that of 1866, had the Council been apprised of the loss when preparing their Annual report.

M. Reinaud, a member of the Imperial Institute of France, and Professor of Arabic, was for 26 years an Honorary member of the Society. He was elected in 1840, in recognition of his eminence as an Oriental scholar, in which capacity he was at one time well-known to the Philological members of the Society. He died in the beginning of 1866 at an advanced age.

Colonel Sir G. Everest, whose decease was announced by the Presi-

dent in his address of last year, is too well-known as the former head of the Great Trigonometrical Survey of India, to need more than the mention of his name; a name which will go down to future times associated with the loftiest known peak in India and the world. 🐾

The decease of Rajah Sir Radhakanta Deva, one of the most eminent men that Bengal has produced, was announced to the Society at the meeting in May, on which occasion, Babu Rajendralala Mitra addressed to the Society a well merited and interesting eulogium on his distinguished and most useful life.

Professor Francis Bopp, perhaps more than any living man, contributed to lay the foundation of the modern Science of Comparative Philology. His Comparative Grammar published in 1845, is the noblest monument of his life.

MUSEUM.

The management of the Museum has been in the hands of the Trustees appointed under Act XVII. of 1866, since the 1st May 1866. The formal transfer of the Society's Collections has not yet taken place, as the lists required by section 13 of the Act are not yet completed. This work has been undertaken by Dr. J. Anderson, Natural History Secretary to the Society, and a portion of the lists are now in the hands of the Council. Provision has been made in the Budget for the ensuing year for carrying on this work, which the Council hope will be completed before the expiration of the year.

FINANCE.

It will be remembered that, owing to the heavy expenditure on the Museum and building repairs in 1865 and 1866, the state of the Society's finances at the commencement of the past year was such as to demand the urgent attention of the Council. As ascertained at the time of preparing the report, the liabilities of the Society amounted to Rs. 7,500; but this amount was found on further enquiry to be considerably below the truth, and the statement of Assets and Liabilities published in the Proceedings in August last, shewed that they amounted to not less than Rs. 9,072-3-4.* Against this, the Society's Cash Assets were Rs. 2,893-5-2 and outstandings to the amount of Rs. 8,136-

* One item of Rs. 735-0-0, viz. Subscription to Oriental Translation Fund, has been struck off by order of the Finance Committee, thus reducing the liabilities at the end of 1866 to Rs. 8,337-3-4.

3-2. The Cash Assets and outstandings therefore exceeded the liabilities by Rs. 1,957-5-0 only, even assuming, (what is certainly not the case,) that the whole of the outstandings could be realized.

Accordingly, active measures were taken to diminish the expenditure of the Society. A Budget statement was prepared, based on the income and expenditure of previous years, and it was decided that a certain proportion of the sum allotted to each item should be set apart to diminish the liabilities incurred for that item in previous years. The Financial Committee were entrusted with entire control over the expenditure, and strict injunctions were issued, that the expenditure on each item should not exceed the Budget estimate, except on urgent grounds and with the special sanction of the Council, on the report of the Finance Committee.

The result of these measures is shewn by the following comparative statement of actual income and expenditure as compared with the estimates. It will be seen that while the income of the year has exceeded the estimates by Rs. 2,358, the expenditure has been in excess by Rs. 510 only, and that there is a net saving of Rs. 1848.

A large portion of the expenditure has moreover been applied to the reduction of debt, so that the Cash assets are now Rs. 5,526-4-5 and the outstandings Rs. 9,071-10-8 ; while the liabilities are Rs. 7,451 11-10 only. A portion of the Cash assets will be at once devoted to a further reduction of the liabilities.

	INCOME.			
	Estimate.	Actual.	Deficit.	Excess.
Admission Fees,.....	1000	1504	„	504
Subscriptions,	8600	8372	228	„
Journal,	900	2820	„	1920
Library,	200	437	„	237
Secretary's Office, ...	20	17	3	„
Coin Fund,.....	80	8	72	„
	10,800	13,158	303	2,661
	Deduct Deficit,			303
	Gross excess of income, ...			2,358

EXPENDITURE.				
	Estimate.	Actual.	Saving.	Excess.
Journal,	5000	4349	651	„
Library,	2150	3195	„	1045
Secretary's Office, ...	2000	1633	367	„
Building,	1000	653	347	„
Coin Fund,.....	300	417	„	117
Miscellaneous,	350	309	41	„
Museum Catalogue, .	„	754	„	754
<hr/>				
	10,800	11,300	1,406	1,916
<hr/>				
Expenditure excess,				516
Income Do.,				2,348
				—nable,
Net excess of income,				1,848
<hr/>				

To complete this comparative review of the financial position of the Society, the statement of assets and liabilities may be given as follows, omitting fractional sums,—

	Cash Assets.	Outstanding.	Gross Assets.	Liabilities.
1866,.....	2893	8136	11029	8337
1867,.....	5526	9071	14597	7451

The Council believe that this statement fully justifies the expectations expressed in their report of last year, that with economy and careful management, the Society's Finances will be restored to their former prosperity long before the removal of the Society to the new museum building.

In framing their Budget for the coming year, they are, however, mindful that this object is not yet attained, and that economy will be no less necessary in the coming than in the past year. The income has been estimated on the basis of an average of the last five years, and the expenditure as far as possible also, and, as in the last year, a certain margin will be allowed on the larger items for reducing the actual liabilities. Any excess of income over the estimate will be devoted to the same purpose.

INCOME.

Admission Fees,	1200
Subscriptions,	8400
Journal,	1000
Library,	350
Secretary's Office,	25
Coin Fund,	25
	<hr/>
	11,000
	<hr/>

EXPENDITURE.

Journal,	5000
.....	2150
.....y's Office,	2000
.....g,	1000
Coin Fund,	300
Miscellaneous, ...	350
Museum Catalogues,	200
	<hr/>
	11,000
	<hr/>

OFFICERS.

The executive officers of the past year have been the same as in the previous year, except that during the absence of the General Secretary and the Treasurer, each for six months, Mr. Ormsby and Mr. H. B. Medlicott took charge of their offices respectively, relinquishing them on the return of their former holders in November. Dr. J. Anderson, the Natural History Secretary has quite recently left Calcutta to accompany the expedition to Yunan, and his office has been kindly undertaken by Dr. Colles, who has been elected to Dr. Anderson's place in the Council.

Babu Protapchunder Ghoshe, has continued to give entire satisfaction as Assistant Secretary and Librarian. He has recently been granted two months leave, to enable him to prepare for the University Examination. During this period, Babu Tarinichurn Ghoshe has been appointed to officiate.

JOURNAL.

The volume for 1867 will be less bulky than that of the previous year, each part consisting of three Nos. only, six in all, of which four are already issued.

The fourth Number of the Literary and Archæological part of the Journal for 1866, did not appear until July in the past year, and the 3rd Number of the Natural History Section for 1866 was published in February 1867. This publication of the Journal so long after its nominal date, has been due to unavoidable delays, and not to any want of activity on the part of the Editors, who have done their utmost to hasten the publication. No confusion as to priority of authorship or publication can arise on this account, because each paper is headed with the date of its authorship and receipt, and the table of contents of the volume shews the date on which each part is published. But the anomaly is undoubtedly objectionable, and endeavours will be made in future, to publish the whole yearly Volume as nearly as possible within the year.

The Council believe that in point of interest, the volume for the present year will bear comparison with that of any previous year. There are doubtless several points in which the Journal is still susceptible of improvement, but the Council have given, and still continue to give their best endeavours to raise its scientific status, and by thus making it a worthy channel for the writings of the best men in the country, they trust to gain for its Natural Science Section as high a character among the corresponding Scientific Societies of the West, as was long since gained for the Journal in its original form among Archæologists and Philologists.

Ten numbers of the Proceedings of the Society have been published during the past year.

LIBRARY.

The state of the Society's Finances has not allowed of any steps being taken towards the publication of the Catalogue, the MSS. of which was prepared in 1866. If, however, the improvement in the Society's resources during the ensuing year should be such as to justify the Council in incurring any expenditure beyond that provided in the Budget, this Catalogue will have a prior claim on their attention. 692 works and parts of works have been added to the Library during the past year.

COIN CABINET.

A large number of coins has been purchased during the past year, including a batch of 143 silver, 11 gold, and 600 copper coins from the Bank of Bengal, and several small batches from dealers. Among the silver coins are specimens of Bactrian, Parthian, Indo-Scythian and Pathan currencies, and some Indo-Greek and Mogal coins. A copper Archabæus and a few gems may be noticed as rare. No progress, however, has yet been made in arranging and cataloguing the contents of the Society's cabinets. It is hoped the Coin Committee will take this subject into their serious consideration, and supply the desiderata in course of the current year.

BIBLIOTHECA INDICA.

The Persian series of the Bibliotheca Indica has been carried on with great energy and activity, and no less than eighteen fasciculi have been published, including portions of three different historical works of great value.

Under the able superintendence of Mr. Blochmann, five fasciculi have been issued of the new edition of the *Ain i Akbari*. The text of this important statistical account of the Empire of Akbar has been prepared after a careful collation of ten different MSS. some of which are very old and remarkably accurate. The way in which it is being carried through the press, reflects much credit on the editor. The Council confidently expect that the work will be in every way worthy of the special patronage which has been extended to it by Government.

Maulavis Kabír-ul-Dín Ahmad and Abdul Rahím have been busily engaged with their edition of Abdul Hamíd's history of the reign of the Emperor Sháh Jehan, and have issued over 1,200 pages in the course of the year under report. Among the MSS. in use for collating the text of this work is a volume of rare accuracy and authenticity. It belonged at one time to the Imperial Library and bears an autograph of Shah Jehan himself. For the reign of his successor Aurangzeb, Maulavi Khádam Hossein and Abdal Hae have issued two fasciculi of the *Álamgírnámeh* of Muhammad Kházim. Both these works, it is expected, will be completed within the current year.

The progress of the Sanskrit series has been very much retarded

by the protracted illness and subsequent death of Paṇḍita Rāmanārāyana Vidyāratna, who had charge of three different works. Two of them viz. the Sañhitā of the Black Yajur Veda, and the commentary on Kāmandaki's "Elements of Polity" have since been made over to Professor Mahes'achandra Nyāyaratna of the Calcutta Sanskrit College, and the third, the *Gr'ihya sūtra* of Āswalāyana to the learned minister of the Brahma Sabhā, Pāṇḍit Ānandachandra Vedāntavāgisa, who are carrying them on with diligence.

. Of the Black Yajur Brāhmaṇa, Bābu Rājendralāla Mitra has published the 22nd fasciculus, bringing to a close the third volume. The English Index is now all that remains in the press for the completion of this work. The Bābu's edition of the Āraṇyaka of that Veda is also in a forward state.

A new work of considerable interest has just been completed by Dr. F. Mason of Tounghoo : it is a Grammar of the Pāli language in English. For a thorough study of the Burmese language, as well as for a knowledge of the Pali as current in Burmah, this work will be found of great use to the oriental scholar. It takes up two fasciculi of the Bibliotheca Indica.

The following is a list of the several works published during the past year in the old and the new series.

NEW SERIES.

The Mimāṃsā Darsāna with the commentary of Sāvāra Svāmin, edited by Paṇḍita Mahes'achandra Nyāyaratna, No. 115, Fasc. V.

The Pāli Grammar, edited by the Rev. F. Mason, Nos. 123, 124, Fasc. I, II.

The Taittirīya Āraṇyaka of the Black Yajur Veda with the commentary of Sāyanāchārya edited by Rājendralāla Mitra, Esq., No. 130, Fasc. V.

The Ālamgirnāmeḥ by Muḥammad Kazim ibn-i-Muḥammad Amin Munshi, edited by Mawlawis Khādim Hussain and Abdul Hai, No. 106, 109, Fasc. X, XI.

The Bādsbāhnameḥ by Abdal Hamīd Lāhawri, edited by Mawlawis Kabīr ul-Dīn Ahmad and Abdul Rahīm, Nos. 106, 107, 108, 110, 111, 114, 116, 117, 118, 121, 125, 126, 127, 128, Fasc. III. to XVI.

The Ain i Akbari by Abul Fazl i Mubārīk i Allāmi, edited by H.

Blochmann, M. A. Nos. 112, 113, 119, 120, 122, Fasc. I, II, III, IV, V.

OLD SERIES.

The Taittiríya Brahmana of the Black Yajur Veda, with the commentary of Sáyanácharya, edited by Bábu Rájendralála Mitra, No. 220, Fasc. XXII.

It was proposed by Mr. Locke and seconded by Mr. Waldie, that the report be adopted.

The proposition was put to the vote and carried unanimously.

The meeting then proceeded to elect the Council and officers for the ensuing year.

It was proposed by the President and agreed to, that Dr. Stoliczka and Dr. Waldie be appointed Scrutineers of the ballot.

The ballot having been taken, the President announced, on the report of the Scrutineers, that the following gentlemen had been elected to serve as officers and members of the Council for the ensuing year.

Dr. T. Oldham,..... *President.*

The Hon'ble J. B. Phear,	}	<i>Vice-Presidents.</i>
A. Grote, Esq.,		
Kumár Harendrakrishna Bahádur,		

Dr. T. Anderson.

E. C. Bayley, Esq.

Dr. J. Ewart.

Dr. J. Fayrer.

Bábu Debendra Mallik.

The Hon'ble J. P. Norman.

Dr. S. B. Partridge.

Col. J. E. Gastrell, *Treasurer.*

Dr. J. A. P. Colles, *Natural History Secy.*

H. F. Blanford, Esq., *General Secretary.*

Rájendralála Mitra, Esq. *Philological Secretary.*

It was proposed by the President and seconded by Dr. Stoliczka that Mr. Paul and Mr. Blochmann be appointed auditors of the accounts for the past year. Unanimously carried.

The President then addressed the meeting before vacating the chair.

PRESIDENT'S ADDRESS.

GENTLEMEN,—While I yet have the privilege of being President of this Society, and before resigning the chair to my successor, I will, with your permission, briefly review our proceedings during the past year. I would not weary you with details, but I think it well that the inauguration of a new year in the Society's history should be noted by a retrospect on the part of the retiring President, of the events which have rendered his period of office interesting, and by an outline of the actual condition in which he makes over to his successor the responsible office with which he has been entrusted. At the last annual Meeting, I alluded to the approaching transfer of the Society's collections to the Indian Museum. That transfer has now been almost virtually (though not formally) completed, and the Society may congratulate itself on being relieved of the charge of treasures which it was no longer in a position to maintain as they merited. We still retain our interest in these collections, and are largely represented in the Board of Trustees of the Museum in which they are deposited, and we have the satisfaction of knowing that they have passed under the immediate care of a Naturalist who will do them full justice, render them of service in the interests of science, and add to the nucleus we have placed in his possession.

The past year, though unmarked by any striking occurrence, has not been altogether an uneventful one. Progress has been made and activity has been predominant, as I think is apparent from the different subjects that have engaged the Society's attention.

I have always considered that the Asiatic Society should be regarded from that catholic point of view, which its founder contemplated, when he said: "It will flourish if Naturalists, Chemists, Antiquarians, Philologists and men of Science, in different parts of Asia, will commit their observations to writing, and send them to the Asiatic Society at Calcutta; it will languish if such communications shall be long interrupted, and it will die away, if they should entirely cease." I am glad to think that during the past year, the spirit of Sir W. Jones'

utterance has been remembered, and that subjects of varied interest have been discussed. Without in the least attributing it to other than unavoidable causes, I have long felt that Physical Science has hardly taken that place in the business of the Society that was contemplated by its founder; and it has consequently been my desire, as far as my influence could affect the question, to see a more equal adjustment of its claims. In no degree undervaluing the importance of Philological and Antiquarian research, I have been glad to see that subjects connected with Natural Science have more equally shared with them, the attention of the members at the monthly meetings; and I trust that such will continue to be the case.

During the past year, many subjects of interest have occupied our attention, and been freely discussed at the monthly ordinary meetings. At that of January, the extraordinary shower of Meteors that occurred on the 14th November, 1866, was noticed by Mr. Masters in Kishnaghur, and his letter to our Secretary, read before the meeting, gave an interesting and accurate account of that remarkable and brilliant display of meteoric phenomena. In a subsequent letter, Mr. Masters, called attention to a second shower of Meteorites on the 12th of December, 1866. This he says was not brilliant or exciting, but worthy of being recorded.

On the same occasion a fragment of a meteorite which had recently fallen in the north of Hungary was presented by Dr. Duka, who described the phenomena attending its fall; its appearance in the air like a ball of fire; the detonation like the simultaneous discharge of a hundred pieces of artillery, with which it split into fragments, the smallest of which weighed a few ounces, the largest many pounds; the rushing sound with which it approached the earth; and the sulphurous garlic-like odour communicated to the air in its vicinity; as also the portentous awe with which it was regarded by the people in reference to the Austrian Campaign, then about to commence, were described.

At the February meeting, a specimen of new Arabic printing by Mr. Ferette of Damascus, was brought before the Society: it appeared to afford some advantages in a typographical point of view and to have met with the approval of those competent to give judgment on such matters. A paper was then read by the Secretary, from Mr. Thomas, a well

known oriental scholar and Palæographer, on the derivation of the Arian Alphabet, in which his object was to shew that the Sanskrit Alphabet was of Dravidian origin, having been adopted by the Arian invaders from the subjugated Dravidians. The combination and nature of certain letters was adduced in support of this theory; but it was opposed, in the discussion that followed, by Babu Rajendra-lala Mittra, who considered that the Dravidian races were far too low in the scale of human advancement to have furnished an alphabet to the more enlightened Arians who had overrun their country. He maintained that the Arian races did not all set forth at one period from their original abode in Central Asia, but that at different stages of their development, they started on their migrations, and that they probably originated the system of alphabetic writing themselves; and that indeed it was only too probable that no Dravidian writing existed at that period at all. The Babu said that Mr. Thomas assumed that the Brahmanic Arians first constructed an Alphabet in the Arianian provinces out of an Archaic type of Phœnecian, which they continued to use till they discovered the superior fitness and capabilities of the local Pali; but this is doubtful, and even the Pali is a vernacular form of Sanscrit, the first stage in its transition into Prakrit; and the Alphabet used to write it down may more reasonably be taken to be its legitimate vehicle, and not that of the Dravidian, of which no inscription either old or new has yet been discovered in the Pali character. Indeed he could see no connexion whatever between the Dravidian languages and the Pali character, nor did he think that the use of cerebral letters, another argument brought forward in favour of the Tamulean origin of the Sanscrit, was tenable. The Babu finished a long and learned commentary on Mr. Thomas' paper, in which, though he dissented from his propositions, he paid a compliment to the author's learning. Further remarks by other members of the Society especially by Mr. E. C. Bayley followed, in which the argument for and against Mr. Thomas' views were discussed; and after much valuable information had thus been communicated, a paper from Col. Phayre, was read on some points of interest in the Môn or Talain language of Burma. Upon this, Mr. G. Campbell made some remarks, which tended to shew that he agreed with Col. Dalton, in that some of the dark tribes of the extreme East of India have probably an affinity to the aborigi-

nal races of Central India; and that the study of these South-Eastern tribes and their connexion with those of the West opened up a boundless field of most interesting enquiry.

Some remarks were then made on a letter from Professor Piazzzi Smyth on the subject of procuring a small block of stone of a peculiar kind from India. It should be of supereminent hardness, fineness of grain, toughness, freedom from fissures and crystallization, and proof against the entrance of water. Its purpose being to form small standard scales of 5 to 10 inches in length, likely to last unaltered in length and quality for a much longer time than the metals hitherto used for the purpose. Something was required capable of going down to all posterity without sensible change during 5000 to 10,000 years.

In commenting on this, the Secretary suggested that, perhaps the Jasper or the Jade of the Soane and Nerbudda valleys might fulfil all the purposes required.

At the March meeting, Professor C. N. Macnamara read a paper on the intimate structure of muscular fibre; a subject of great histological and physiological interest. Mr. Macnamara with the aid of a very powerful lens, (one-fiftieth of an inch object glass) has investigated the minute structure of this remarkable tissue, and has arrived at conclusions which differ somewhat from those of other histologists. He stated his belief that the contractile homogenous substance which gives a muscle its peculiar properties, is arranged, in voluntary and involuntary muscle, so as best to fulfil the mechanical purposes for which it is intended. He does not consider that in voluntary muscles there are such elements as those termed sarcois particles, but that they are composed of longitudinal and transverse bands of contractile tissue, peculiarly arranged: diagrams illustrative of this arrangement were exhibited. He further stated his impression that such being the structure of muscle, it displays a source from which animal heat may be derived: much of Liebig's theory of heat from combustion and tissue-change thereby falling to the ground: that in muscular action there is evidence of force as capable of developing heat, as is combustion, and that electrical phenomena attendant on certain muscular movements, may thereby be accounted for, independent of nervous action: that it is a question indeed, of conversion of forces. Considerable discussion especially on

the thermal question, arose out of this thoughtful and interesting paper. The subject of it is still under Professor Macnamara's investigation.

At the April meeting, Mr. Waldie, an eminent Operative Chemist, revived a subject that had previously occupied the Society's attention—the composition of the Hooghly water. The paper described to the actual composition and impurities, not only of the water generally, but also of that taken at different parts of the river, below, opposite and above the city, and again at different stages of the Tide. This especially in reference to the great and important question of a water supply for the city. Considerable discussion followed, with the result of throwing much light on the bearings of this important subject.

At the May meeting, Babu Gourdess Bysack read an interesting account of the antiquities of Bagerhaut in the Jessore district, 450 years ago, the seat of a Collectorate under the Mahomedan government. It was presided over by one Khan Jehan, a Pathan of distinction; he enriched the place by constructing many noble buildings and stately edifices, of which now only a mosque and a tomb remain. Besides the tomb of a Mahomedan Pir, who made himself famous by out-casting certain Brahmans, whose descendants retain to this day, in consequence, the name of Pir Allies. There are a tank full of tame crocodiles, supposed to possess many and extraordinary virtues and powers—a mosque, remarkable for having sixty domes; and a peculiar acoustic phenomenon of a series of sounds which are heard at this place, and loudest *after* storms and during calms, attributed by some to the distant sea breaking on the shore, but by the Babu and others, to some subterranean cause.

Mr. Hill, Professor of Engineering in the Presidency College, then read a most interesting paper, which he illustrated by drawings, of a new form of steam engine, whose merits consist in the great economy of fuel and power, not less than in the simplicity of its construction. In the course of his description, he compared it with other forms of engines, pointed out its superiority, and contrasted the relative expenditure of fuel and force in each. An interesting discussion followed, on subjects connected with steam power and machinery generally, and

Mr. Hill was good enough to promise a further communication on the subject.

At the June meeting, which I was unfortunately prevented by professional duties from attending, a paper by Mr. E. B. Cowell was read, on the Toles of Nuddea; being a description of them, as they were observed by the author in 1864. Tole (টোল) is described by Mr. Cowell to be a Bengali word of uncertain derivation. It means or represents a state of feeling in ancient India, similar to that which obtained in ancient Greece, viz., the popular prejudice against receiving mercenary reward for the communication of knowledge. The Pandit of a Tole should not only instruct, but he should feed and lodge his pupils for nothing; and such is the case with the Pandits of many Toles; though, in Nuddea, they have broken through the system, and now only supply lodging for nothing. The nature of the studies, Nyaya and Smriti, was also described, and information on the Hindu Systems of Philosophy and Logic and their mode of teaching followed. The various Toles and their students are mentioned, as also the pundits learned in these abstruse subjects. The peculiarities of the scholastic training are described—and the errors of the form of Hindu Logic, which is so fatally bound up with technical terms, that it inevitably degenerates into a mere playing with words, is described as being exaggerated to its height in the Nuddea school, and specimens are given from actual discussions held before Mr. Cowell of the nature of these logical quibblings.

Mr. Cowell says, that one of the things which most struck him was, the desire for English education evinced by them all. These Toles in Nuddea it appears, receive a pension from Government of Rs. 1200 a year. Mr. Cowell concluded his report by a recommendation that some superintendence of the Sanscrit studies in these Toles should be exercised, that examinations should be held, and rewards granted to the deserving.

This paper was followed by a report by Mr. McClintock, the American Vice-Consul at Bradford, on the manufacture of Chinese grass, and he solicits information from Consular officers in China, especially from Hankow, which is the chief market for the grass.

Babu Protapchunder Ghoshe then read an interesting paper on the Hindu Calendar, in which he informed the Society that the Hindoo

civil year is a practical modification of the Hindoo astronomical year.

The proceedings of the meeting were closed by reading a letter from Major Strutt, giving a description of a Greek coin of Sophytus, which had been purchased in the Peshawur district, with other coins of the Bactrian series: also a gold Diodorus and a Bucephalus in excellent preservation.

At the July meeting, a paper was read by Mr. Ball of the Geological Survey, on the Jungle products used as articles of food by the inhabitants of the district of Manbhoom and Hazareebagh; a subject of peculiar interest at the time when so large a number of human beings were perishing from want of grain. Mr. Ball described the products under six headings, viz.—fruit, seed, flowers, leaves and stems, roots and fungi. Specimens of all were laid on the table, with a Botanical description of each. It appears from Mr. Ball's paper that a number of the people of the aboriginal tribes, such as the Santhals and Coles, as well as the poorer classes of Hindus, depend solely on the Jungle to supply them with food, for two or three months in the year. Some useful information was then communicated by the author, in reply to various questions put by the meeting.

A paper was then read by the Secretary from Mr. Amery, Superintendent of arboriculture at Lahore, on the origin of races; in which he stated his impression that the human race consisted of a *genus* comprising several well marked species, some of the particular characters of which are illustrated in the physical and mental characters of the Australian, the American, the Indian, the Negro, the Mongol and the Caucasian. That the different types of men occupy areas corresponding to the different Geological and Botanical provinces, and that it is improbable (Mr. Amery thinks) that they are parts of the same original creations. He thinks that it is a remarkable coincidence that the race peopling even geologically newer regions, is higher in the scale, than the race of the next older region. Mr. Amery deduces from the study of this subject, that different types of men are separated by wide differences, and that every argument, which has been advanced in support of the unity of the race, will be found, if tested critically, a vain effort to reconcile facts with pre-conceived theories; also that different capacities are

inherent in different races, as are difference of colour and other peculiarities. This he illustrates by saying that colour is shewn to be quite independent of climate: the black Negro and the yellow Mongol maintaining the same complexion in tropical, temperate and even arctic climates; the mental faculties of different races being equally marked, and having always been so: that the child of a Yorkshire peasant can be made by education equal to the most learned in the land, whilst the child of an Australian is only capable of learning to a certain point: and hence that certain races, like the Caucasian are capable of civilization, while others like the Red Indian and Tasmanian are not. The paper though propounding no original or extraordinary theory, excited considerable discussion among the members, the subject being one, at present, of much interest in the scientific world.

Mr. W. T. Blanford took exception to the author's views, and pointed out, that in many respects they were not such as were received by ethnologists; he thought that Mr. Darwin in his chapters on geographic distribution in this work on the origin of species, had satisfactorily explained most of the phenomena alluded to in Mr. Amery's paper. This was followed by a most interesting description by Mr. W. Blanford of much of the Fauna of Central India, in which the question of the varieties of the Bengal tiger, the lion of Central India, various bovine and cervine animals, as well as antelopes and birds, were discussed, and many interesting facts in the natural history of these creatures were narrated by the author, who has made Indian Zoology a special subject of study, and who is not merely a closet naturalist, but one who has studied the habits of the animals in a state of nature. We are glad to think that these qualifications are now being applied for the benefit of science with the Expeditionary Force in Abyssinia.

At the August meeting, a paper by Dr. S. B. Davis on the Ethnology of India was read, and as the author premised, it was no new subject, but yet one of great interest, and in the present day attracting considerable attention. Dr. Davis did not propound any new view or theory, but rather insisted on the value of the study of Craniology as a much more reliable basis for the study of Ethnology, than Philology possibly can be; and he objected to the affinities of the European

and Hindoo races being decided alone by the structure of language. The paper induced considerable discussion, and had the advantage therefore, if not in itself original or new, of doing what appears to me so desirable when important questions of a scientific nature are before the world, of directing the attention and of keeping it fixed on the object, as also of eliciting what new views men have actually arrived at, in connection with the points at issue.

A paper was then read by the Secretary, from M. Emil von Schlagintweit, upon peculiarities of the languages of the aborigines of India and Thibet, and their analogies, and also on their physical peculiarities; with remarks upon the facial characteristics, which elicited some discussion on the subject from Dr. J. Anderson and Mr. W. T. Blanford. Some valuable hints on the mode of making casts of the head were given by Dr. Anderson, who remarked that, by this process, he hoped, in time, to have life busts of all accessible Indian Races. A memorandum was then read by Professor Partridge, Honorary Secretary to the Falconer Memorial Committee, in which he stated that there still remained a debt of Rs. 110 for the marble bust of the late Dr. Falconer and he therefore appealed to the members for additional subscription; not only to defray this debt, but to provide a suitable pedestal for the bust, which was there for the Society's inspection.

At the September meeting, Mr. W. T. Blanford read an interesting account of the stone implements that have been found in India, the result of his own observation and of communications from other investigators. To this interesting collection of the vestiges of prehistoric man, the Central Provinces, Central India, Madras, Bengal proper, Bombay, Scinde, Assam, Burma, Java and the Andaman Islands contributed, and a tabulated account of the specimens found in each of these localities was laid before the meeting, describing their nature, the exact locality and position in which they were found, the name of the discoverer, and mentioning the Museum or other site in which they are deposited, with remarks illustrative of each specimen. Several members of the Society made remarks on these stone implements; and an interesting discussion followed on them, as found not only in India, but also in other parts of the world. Mr. Blanford said that he was inclined to believe that we have, in them,

evidence in India of the existence of man at a much earlier period than in Europe; but that the subject has not attracted, among scientific men, the attention it deserves. There is evidence of the co-existence of men with the animals whose fossil bones are found in the Godavery gravels; and that this indicates a great antiquity; for the fauna of the Nerbudda gravels (which is identical with that of the Godavery,) indicates the presence of animals of Western (African and European) affinities, which have since, in long periods of time, been substituted by creatures of Malayan affinities. The great Bovine of the Nerbudda gravels, an animal, the remains of which are peculiarly abundant, was a true Taurine, so closely allied to the great *Bos primigenius* of Europe, (the *Bos Urus*) that the differences are scarcely more than sufficient to constitute geographical races. But as is well-known, the only indigenous race of wild Bovines, (exclusive of the Buffalo,) in the Indian Peninsula, the Gaur, is a flat horned Taurine belonging to the sub-genus *Gavæus* or *Bibos*, widely different in structure from the true round horned Taurines; and both the Gaur, and other species of the same sub-genus are unknown north and west of India, in the countries inhabited by the modified domestic descendants of the *Bos primigenius*, but abound throughout the Malay Peninsula and in several islands in the Malayan Archipelago. This, as Mr. Blanford pointed out, is a case of complete substitution of one animal by another, and he knows of no case of substitution having taken place since the pleistocene period. Species have died out, just as the Hexaprotodont and Tetraprotodont Hippopotami of the Nerbudda have become extinct in India, but that is all. It seems to indicate a longer interval in India since the deposition of the Nerbudda gravels, than has taken place in Europe since the formation of those pleistocene beds in which the oldest remains yet discovered, are found. The antiquity is therefore doubtless great, and the suggestion is one worthy of the attention of Palæontologists.

Some discussion followed on the antiquity, uses and varieties of these implements; and some glass flakes, recently brought from the Andaman islands, and resembling those of obsidian found in Mexico when first the Europeans landed there, were exhibited, and excited much interest; as serving to connect the past with actually existing races of men, whose debased condition contrasts as strongly with

that of the civilized races; as it is suggestive of what may have been the condition of those earlier races of men who used similar implements.

At the November meeting, Captain Anderson of the Bengal Army exhibited two Andamanese lads of about 10 years age, whose education he had undertaken. Captain Anderson said he had found them apt at learning the names of things and in acquiring a parrot-like imitation of sounds; and that they had a peculiar desire and fondness for dress. The boys were made to sing a native song, and perform a native dance. They are sharp bright little fellows, true Melanesians or Negritos, and albeit they are considered to be among the lowest of the human race, have all the quickness and vivacity, with apparently much of the intelligence, of races more advanced in civilization than they are. It has been said that they are cannibals, but without sufficient grounds, and I believe that those who know them best, consider that there is no foundation for this report. They have very much the aspect of the African Negro: the blackness of skin and crisp curliness of hair are not to be surpassed. Indeed some Ethnologists regard them as the descendants of Africans, who have been wrecked on the islands and have degenerated thus low in the scale.

But again it is said by others that in neither skull nor teeth do they present the true African characteristics, and that they are not more prognathous than other Asiatic tribes. Dr. Latham represents their language as being connected by a link with the monosyllabic tongue of the Burmese. As is the case with most other of the lower types of the human race, the introduction of European civilization and habits is of questionable advantage, for with the good, so much of the evil is learned, that their ultimate extinction is more probable than their advancement among the other races of men. Disease and alcohol have found them out, and it is to be feared that, like the Caribs of the Antilles, their end is not far off.

An important communication was then made by the Chairman, Professor Partridge, who drew the attention of the Society to the discrepancy of the observations at the Meteorological Observatory during the late cyclone; also to the destruction of the Anemometer, and moved that Government be solicited to make enquiry into the causes of these

failures, as well as to make provision for more perfect observation in future.

Mr. Waldie then made some further remarks on the Hooghly water, a subject that had already been before the Society.

At the meeting in December, a paper was read on the Himalayan Bear, and the question of its carnivorous propensities was discussed in reference to a letter on the subject from Dr. Stewart of Lahore. The result of the discussion was to prove that the animal certainly is carnivorous, not only by nature, but by habit, when it has the opportunity.

Col. Fytche, C. C. of British Burma, then read an interesting paper on the Panthays, Soenie Mahomedan inhabitants of Yunnan, and in his description, gave an account of these descendants of one of the widely spread waves of conquest that once swept over India, in the early days of Mahomedan invasion. Their history and actual position were narrated, and have a peculiar interest at the present moment, when an expedition, of which I am rejoiced to say Dr. J. Anderson, our Natural History Secretary, is a member, is about to start for the exploration of this province, with a view not only of scientific research, but of opening out the trade with China.

This closed the proceedings of the ordinary monthly meetings during the past year. The subjects discussed have been various and interesting ; comprising Meteorology, Philology, Ethnology, Anthropology, Physiology and Histology, Chemistry, Archæology, Palæography, Botany, Engineering and Numismatology, Geology, Geography and Zoology. This appears to me to have been what was contemplated by Sir W. Jones when he founded the Society, and I would fain hope that the subjects of our future proceedings will be equally varied.

I must now pass on to other matters, and in noticing the obituary, which, I regret to say, is heavy, I have to pay a tribute to the memory of several distinguished members whose loss we have to regret during the past year.

First on the honorary list, it is my melancholy duty to record the loss of the veteran, Professor Franz Bopp, who may be rightly styled the Father of the Science of Comparative Philology. The Leipzig Illustrated News of the 2nd November, 1867, contains the following announcement. Died at Berlin on the 22nd October, 1867, Dr.

Franz Bopp, ordinary Professor of Oriental languages of the Faculty of Arts of the University of Berlin, to which he had belonged since 1822. He was born on the 14th September 1791, at Mayence, and was famous as being the founder of Comparative Philology, also as the author of many scientific works. He was a member of the Institute, a Knight of the Civil Order of Merit, Knight of the Red Eagle of the second class with the Star.

This brief newspaper notice gives but a faint outline of the history of this eminent Philologist, whose whole life was devoted to the study of language, and especially of oriental literature. Dr. Bopp's philological labours have formed a new era in linguistic studies. His great work, the Comparative Grammar of the Sanscrit, Greek, Latin, Lithuanian, Ancient Slavonic, Gothic and German, presents a complete analysis of the grammatical form of the Indo-Germanic languages; and the general laws he deduces from them, are considered highly creditable to his perspicacity. His writings which are both numerous and voluminous, have greatly facilitated the acquirement of the Sanscrit language, and his translations of various Indian classics have contributed largely to our knowledge of oriental poetry, morals, and philosophy, as exhibited in the ancient literature of India. For a general notion of what has been achieved by this great scholar, reference may be made to the *Edinburgh Review*, No. 192, p. 298, and to the *Calcutta Review*, No. 24, p. 468. It will there be seen that this work has created a new epoch in the Science of Comparative Philology, and that it may justly be assigned a place in that department of study, corresponding to that of Newton's in Mathematics, Bacon's in Mental Science, or Blumenbach's in Physiology." Professor Bopp, for his great services in the Science of Comparative Philology was elected an honorary member of this Society in the year 1831. It is but little to say of him, that Philology has lost its greatest light, and this Society one of its brightest ornaments.

In the Raja, Sir Radhakant Deva Bahadoor, K. S. I. we have also to mourn the loss of a Sanscrit scholar, and author of the highest distinction, whose name has adorned our list since March, 1855, when for his great services in the course of oriental literature, he was elected an honorary member. It was my duty on a former occasion to announce to the Society the death of this great man at a ripe old age,

and in doing so, I alluded to his merits not only as an oriental scholar and author, but as a foremost man in native society, and a leader of Hindoo thought. His great work, the Sanscrit Encyclopædia, (*Sabda Kalpadruma*) of 8,000 pages, over which the greater part of his life and much of his fortune had been spent, has immortalized him in Sanscrit literature, as have his many virtues in the hearts of his countrymen; it has gained for him the highest honour from scholars and crowned heads in Europe, and last of all, and perhaps that which afforded him most gratification, the knighthood of the Star of India, as a recognition by the Empress of India of the claims of her learned subject. His labours and character are so well-known, that it is unnecessary for me to add to the many appropriate encomiums that have been passed on his life and works; I have only to place on record the deep regret with which we learned that India had lost one of her most distinguished scholars, and our Society one of its most honored members.

M. Reinaud was born at Lambesc en Provence in 1795, and commenced his education at Aix, whence he went to Paris in 1814, to begin those oriental studies in which he subsequently became so great a master. He was elected an honorary member of this Society in March 1840, and I regret to say we have received news that the death of this great Arabic scholar took place on the 2nd January, 1867, at Nice.

M. Reinaud was professor of Arabic in the school of living oriental languages in Paris. He was also custodian of the oriental MSS. in the Imperial Library, and he was the author of many historical and geographical works. He has left two which are about to be published; one is a report on the progress of Arabic literature in France during the past 20 years. The other is the first volume of a collection of Arabian historians of the Crusades, the publication of which had been entrusted to him by the "Académie des inscriptions." M. Mohl in his address to the Société Asiatique de Paris has the following remarks:—

"In his ardour for work, M. Reinaud paid regard neither to the demands of age nor the exhaustion of his powers. About two years before his death, he appeared to have had a vague idea that he ought to diminish the amount of his work, and apply himself solely to the

completion of that which he had begun. He ought indeed to have ceased at that time from all labour, but he could not reconcile himself to inactivity; and the consequence was, that he fell a victim to one of those terrible accidents by which an overwrought brain sometimes revenges itself on those who deny it necessary rest."

M. Reinaud was President of the Société Asiatique for 20 years, and he discharged the duties of that office with extraordinary exactitude. It was his perseverance in all he undertook, that enabled him to attain to the high position he held. It was by slow but incessant labour, and by being careful never for a moment to lose sight of the object he had in view, that he was enabled to render his talents so profitable. For his high attainments in Arabic literature, he was elected an honorary member of this Society in March, 1840.

It is not only in Philology that our loss has been heavy, we have also to deplore the death of a Physicist of great distinction, one whose fame too had been acquired in India. The death of Sir George Everest would have been noticed at the last annual meeting, had not the news reached us somewhat late for that occasion. This eminent Surveyor and Geographer was born at Gwerndale, Brecon, on 4th July, 1790, and entered the Bengal Artillery in 1806. Almost from his arrival in India, his scientific career may be said to have commenced. Having been selected for the duty by Sir Stamford Raffles, he made a reconnaissance survey of Java, during the British occupation of that Island from 1814 to 1816. His next work of importance on his return to India, was in connection with Engineering, and particularly on the Telegraph between Benares and Calcutta.

In 1818 he entered the great Trigonometrical Survey as an assistant, and his first employment in this new Department was in the Nizam's dominions. Here the climate so much affected his health, that he was obliged to go to the Cape for change; and during this period he wrote a paper, which was published in the proceedings of the Astronomical Society, on the circumstances appertaining to the Abbé de la Caille's arc.

In 1823, on the death of Colonel Lambton, Captain Everest became Superintendent of the Survey, and he worked with so much ardour in this new office, that he was compelled to go to England for rest and change. He returned to India well supplied with Geodetical

Instruments, and fortified by his own study of all that was new or important in the surveys in Europe. He was now appointed to the high office of Surveyor General of India. Under his direction, this work progressed, and other measurements of the great arc were carried on, until the whole Indian arc from Cape Comorin to the Himalayas was completed.

The operations involved in this important work were described by Colonel Everest in his work on "the measurements of two Sections of the Meridional arc of India." He was elected an honorary member of this Society in 1860, and on that occasion it was justly said—"Of the many works executed under Colonel Everest's directions, the most important, and that by which he will be best known to posterity is the Northern portion of the great Meridional arc of India, $11\frac{1}{2}^{\circ}$ in length. No Geodetic measure in any part of the world surpasses or perhaps equals in accuracy this splendid achievement. By the light it throws on researches into the figure and dimensions of the earth, it forms one of the most valuable contributions to that branch of science, which we possess, whilst at the same time it constitutes a foundation for the geography of Northern India, the integrity of which must for ever stand unquestioned. Colonel Everest reduced the whole system of the Great Trigonometrical Survey of India to order, and established the fixed basis on which the geography of India now rests."

His name is perpetuated in India by being associated with one of nature's grandest works. The highest peak of the Himalayah 29,002 feet above the level of the sea, is Mount Everest: a graceful compliment to his distinguished predecessor, paid by Sir A. Waugh, the late Surveyor General. On retiring from the service he received the honors of Knighthood, and was elected on the Council of more than one learned Society. They, in common with ourselves, have to deplore the loss of this great geographer, whose death occurred at the ripe age of 77, when he had been about six years an honorary member of this Society.

From the ordinary list we have to regret the loss of Major General Sir J. B. Hearsay, K. C. B. a member since the year 1848. Though I am not aware of any contribution especially made to the Society by this distinguished officer, it is worthy of record that amid the arduous duties of a Military Commander, he yet found leisure as a sportsman for the exercise of his tastes as a field naturalist.

Though hardly the occasion to descant on the brilliant Military career of the deceased, I may not omit a simple reference to the long and distinguished service, which, commencing in Bundelcund in 1809, became more conspicuous in the Pindaree campaign, and gained for him preeminent distinction at Seetabuldee, again at Bhurtpore, and later in the Punjab and at Guzerat, until finally he gained his greatest laurels during the mutiny; services which won for him not only the honors of the Knighthood of the Bath, but the respect and admiration of his countrymen.

In addition to the persons whose names I have mentioned, the Society has to regret the loss of several other members. Lieutenant-Colonel Short, R. Bengal Engineers; Major Fuller, R. A. Director of Public Instruction in the Punjab. The Hon'ble Mr. Justice Shumboonath Pundit, the first native judge of the High Court, and Baboo Jalava Krishna Singh. These gentlemen were all distinguished in their own especial walks of life, but, with the exception of Baboo Jalava Krishna Singh, a Sanscrit scholar of note, who served as a Member of the Council, and was for three years a Vice-President, none of them, that I am aware of, took an active part in the work of the Society.

I am happy to announce that the Government has generously granted a sum of Rs. 680 for the repairs of Sir W. Jones's tomb. It appears to have fallen of late into ruin, and an estimate being called for, we found that the sum required was beyond the straitened resources of the Society. We accordingly applied to Government, who, with prompt liberality, granted the necessary funds. The repairs are again progressing, having been retarded by the late Cyclone. There has been some delay, but we have reason to believe that ere long the resting place of the Founder of our Society will be restored to a state of decent repair.

I am glad to say that, notwithstanding casualties, our numbers have increased, we have had an addition of 53 new members to our list. By death or resignation we have lost 27, but this still leaves us a net increase of 26, which, added to 391, the whole number at the beginning of the year, makes a total of 417 members; this is the largest number that the Society has hitherto had on its rolls.

There are four vacancies among the honorary members, and it will be the duty of the Council to submit certain names distinguished either in Philological or Physical science, that I believe will command universal approval.

In addition to the subjects discussed at the monthly meetings, there are others that require notice. In Dec. 1865, I proposed to the Council that an effort should be made, with the aid of Government, to bring together in one great congress, representatives of the races of man of the old world, pointing out, at the same time, that Calcutta was peculiarly favorably situated for the accomplishment of such a project; the suggestion was well received by the Council, and it has been approved by scientific men generally. Great difficulties lay in the way, but none, it appeared to me, that science, aided by money, could not overcome; and as the object was one of universal interest, it was not surprising that it excited attention, for surely on no point of natural science could investigation be better bestowed, than on that which might throw light on some of the most interesting problems in the natural history, age, and affinities of our race.

I must here express my acknowledgments to Mr. E. C. Bayley the President, to the Council, and to Dr. J. Anderson, the Nat. Hist. Secretary, for the encouragement and assistance I received from them towards the development of the project. The Society is also deeply indebted to the Government for the part it has taken in advancing the subject of ethnological enquiry. Reports have been called for by all the Governments from their subordinates in India, and already a large collection of valuable papers on the various tribes under their jurisdiction have been received. Photographic representations of many of the Hill races have been presented, and not only has sanction been accorded to Colonel Dalton to edit a work on certain of the Indian tribes, of which work four chapters are already finished, but Dr. Simpson, who has done so much already for Ethnology with his Camera, has been permitted by Government to complete the photographs still wanting to illustrate the work. It has been a subject of great gratification to the Ethnological Committee to find that so many of these gentlemen, notwithstanding their multifarious and arduous duties, have entered into the enquiry with spirit, and have furnished reports that are as creditable to them as

valuable to us. To Colonel Dalton especially are we indebted for many contributions, and for his services in editing the work upon which he is now engaged.

The original design of a congress of all the races of the old world, has undergone some modification, and it has been reduced to the minor proportion of a congress of the races of India.

The scheme progresses but slowly. Financial difficulties stand in the way, and it is not yet sufficiently matured, to assure us that any prospect of its early realization is practicable, but still the subject of ethnology has received an impulse, and men's minds are gradually becoming more and more imbued with interest in one of the leading questions of scientific enquiry of the present day.

A vast amount of valuable information has been collected,* and by

* ETHNOLOGICAL REPORTS.

Received from the Government of Bengal.

From the 24-Pergunnahs.

Patna.	Cuttack.
Beerbhoom.	Purneah.
Burdwan.	Bhaugulpore.
Western and Eastern Doars.	Chittagong.
Dacca.	Assam.
Rajshye.	Tirhoot.
	Straits Settlement.

Through the Government of India, Home Department.

Central India.	Rewah.
Gwalior.	Bhopal.
Malwa.	Nowgong.
Sirdarpore.	Hyderabad.

Through the Government of N. W. P.

Dehra Dhoon.	Etah.
Saharunpore.	Mynpoorie.
Mozuffnuggur.	Furruckabad.
Meerut.	Futtehpoore.
Boolundshur.	Allahabad.
Allyghur.	Hameerpore.
Robilcund.	Cawnpore.
Agra.	Banda.

the aid of Government, the Society is gradually becoming acquainted with the numerous varieties of the human race living under the Indian Empire. Craniological collections are also being made by the Natural History Secretary, and to these also, from the valuable aid of the District and Medical Officers, we look for further contributions.

At the last meeting of the British Association, held at Dundee, the subject of enquiry into the history, habits and peculiarities of certain of the Autocthones of India was discussed, and a committee of Savans nominated for the purpose of communicating with the Secretary of State for India, with the view of obtaining information on these and kindred subjects. As this question, on a larger scale, had already been raised by this Society some time ago, I wrote to the Secretary to Government in the Home Department begging him to move Government, in the event of any action being taken by the Secretary of State at the instance of the Committee of the British Association, to associate our enquiry with theirs. The Government was pleased to reply that the action of the Asiatic Society in this matter had already been reported to the Secretary of State, and that with reference to delay on the part of some of the subordinate governments in sending in ethnological reports, reminders should be forwarded to such as had not yet complied with the requisition.

With reference to the reports already received, I should weary your patience were I to enter into details. But I take this opportunity of placing on record the cordial acknowledgments of the Society

Busti.

Benares.

Mirzapore.

Ghazipore.

Bombay Government.

Kurrachee.

Kaeri.

Sind.

Surat.

Hydrabad.

Poonah.

Ahmedabad.

Madras Government.

Two reports from the Inspector General of Madras.

to those gentlemen who have done so much for ethnology, and who, amid the labours of their official duties, have yet found time to compile these valuable papers.

As to the scheme itself, I may say that it has been generally approved of. All see the difficulties, but all equally recognize its value if carried out in a liberal and scientific spirit. My friend, Professor Huxley, gave it his approval, and regretted that he should not have the opportunity of being here to see it carried out.

For my own part I cannot see that the difficulties to be overcome are greater than those which had to be dealt with in the Great Exhibitions in England and France, or even on a minor scale in this country. The success of these proves that where the will exists, the way is not impracticable. It is merely a question of money and scientific enterprise. In the former we may be wanting, but I trust not in the latter, and I am glad to think that the experiment, on a small scale, has already been made in the Central Provinces, by the spirited and energetic ruler of that part of India.

I am, however, quite aware that the present is not the time to hope for much pecuniary support or aid from Government. Famine and flood, war and pestilence have prior claims to science on the coffers of the state and the liberality of the public; in the mean time we must go on collecting all the information we can get, feeling thankful for what we have already received, and looking hopefully for more.

It is with great pleasure that I refer to the sanction of Government accorded to the appointment of scientific observers with the expeditions about to penetrate into Abyssinia and Yunnan. On learning that an expedition was to enter Abyssinia for the purpose of releasing the British subjects kept in duress by King Theodorus, I addressed the Secretary in the Home Department, in the name of the Society, requesting him to move Government to sanction the appointment of scientific observers to accompany the expedition, pointing out briefly the interest with which science looked on this opportunity of adding to our knowledge of the Fauna, Flora, Mineralogy and Geology of these countries. The opportunity was also taken of asking for the appointment of some one to accompany the expedition then projected to the Nicobar Islands. Almost by return of post, we received the gratifying intelligence that the Viceroy had approved of the suggestion, and had nominated Mr. W. Blanford to

the former and Mr. J. Ball to the latter expedition. We learned shortly after that the Bombay Government contemplated the organization of a scientific establishment on an extensive scale, and we therefore anticipate the most satisfactory results. The expedition to the Nicobars has apparently been abandoned and Mr. Ball's services are consequently in abeyance.

It is not less satisfactory to know that another member of our Society, Lt. Beavan of the Bengal Staff Corps has been appointed by the Secretary of State, at the instance of the Zoological Society in London, to accompany the expedition to Abyssinia, as Naturalist. We have thus earnest of real work, and we look forward to most important results.

Our energetic Natural History Secretary, Dr. J. Anderson, Curator of the Indian Museum, has been appointed by the Government of Pegu to accompany the expedition into Yunnan. As this is a country all but unknown and unexplored, we have promise in the well-known energy of our Secretary of much valuable addition, not only to our stock of knowledge, but also to our collections. It is not only in these special fields of research, but I am happy to say all over India, that our members are zealously working, and by their contributions daily adding to our knowledge of the country, its products, its people and their languages.

The various Committees of the Council have worked zealously and well. It would be impossible in the short space of time available for an address of this nature to specify or even notice all their proceedings, I shall content myself by remarking on what is most important. The Philological Committee have made arrangements for printing a Grammar of the Lepcha tongue by Major Mainwaring, and application has been made to Government for the Major's services, that he may have an opportunity of revising his Grammar among the Lepchas themselves.

The Chief Commissioner of Rohilcund has also been requested to obtain for the Committee, a Catalogue of the Persian works in the Library of the Rajah of Rampore.

On the recommendation of their Secretary, Babu R. Mitra, the Philological Committee have adopted the Jonesian system of transliteration, as modified by Professor Wilson, in spelling oriental words; and have also adopted a key to the system, by the Secretary, who has printed

and circulated 2,500 copies. It is to be hoped that this key to a uniform system of spelling Indian words will bear abundant fruit ; for the Government has directed its distribution among the officers who are engaged in making ethnological reports.

With reference to the new Act for registering every book printed, and for keeping copies of each to form a Bengal library, the Committee had offered, on certain conditions, if required, to take charge of the books ; but the necessity for doing so has been obviated by the appointment of a Librarian on the part of the Government.

It is with great satisfaction that the Committee report the completion of the long expected Pali Grammar.

The important question of the Catalogue has been frequently discussed, but without any satisfactory conclusion having been arrived at. It has, however, been resolved that a revised edition of the alphabetical Catalogue shall be published meanwhile.

The state of the library has improved since last year ; the Librarian has arranged in separate cases all the works on Natural History, Botany, Agriculture, Grammar, Mathematics, Chemistry, Meteorology, Law, Theology, the Dictionaries and Transactions of Societies, which were formerly mingled, without order. This new arrangement is on the point of being completed.

A classified list of all the works on natural history has also been drawn out.

The hours during which the library is kept open have also been extended : it is now open from 10 to 5, instead of to 4 p. m., and I may incidentally mention, that the Council have acknowledged the merits of the Assistant Librarian, Babu Money Lal Bysack, by increasing his salary.

New books, periodicals, papers and transactions of learned Societies have been received as usual, and to the extent following :—

New books, presentations,	248
Do. from Government,	67
Authors' editions,	49
From Societies, foreign and local,	132
No. of papers received,	23

Most of the new books are works on natural history. With reference to the new alphabetical catalogue sanctioned by the Council, the

Library Committee have asked for a grant of Rs. 1,600, which the Finance Committee will grant when the funds will admit of it. As to donations of specimens, a considerable number have been received, of various kinds : they have been added to the other collections transferred to the Indian Museum. But as the inventory of the specimens to be made over is not yet complete, the formal transfer is not yet accomplished ; nor can it be until the new Museum is ready for their reception. I may add that, with the view of completing the inventory, two assistants have been employed, entailing a considerable expense on the Society whose funds at present are ill able to bear any extra strain. We have therefore, as the work is done as much in the interests of the Museum, as of the Society, asked the trustees of the Museum to share the expense attending the completion of a *catalogue raisonnée* of the collection.

The Natural History Committee has also transacted its share of the business of the Society.

At the first meeting I proposed that an attempt should be made to establish a zoological garden in Calcutta. At the subsequent meetings, the Committee matured the scheme ; ways and means, plans and localities were discussed, examined and inspected, and the project becoming known, it received the munificent offer of 30,000 Rupees from the Rajah of Burdwan, and of Rs. 3000 from Babu Rajendrá Mullick. The Committee subsequently associated itself with the Agri-horticultural Society with the view of developing the project into the more extensive one of a public garden, a peoples's park, where not only might the public seek recreation and health, but also have the opportunity of studying natural history and horticulture. It applied to the Government of Bengal for a piece of land for the purpose ; subsequently a deputation from the joint Committees waited on the Lieutenant-Governor and explained their object. It met with a most gracious reception, and Mr. Grey expressing himself generally in concurrence, stated that he had doubts as to its success, and as to whether the piece of ground asked for, viz. the Kidderpore property, recently taken over by Government from the Orphan Society, would be given ; but promised to examine the site, and give a reply to the deputation. Up to this time, no answer has been received ; but the Committee feel satisfied that this as

all other questions, concerning the public good, will receive His Honor's due and deliberate consideration.

As to the subject of the garden, I hope the project will not be abandoned; for not only is Calcutta wanting in a Zoological garden, but also in public and open spaces away from the city, where the people can combine instruction with recreation; in this respect it is far behind other cities in India.

In the department of Numismatics, some additions have been made to the collections; about 30 ancient coins have been added to the Cabinet, besides a large collection of modern European gold and silver pieces, which were purchased from the Bank of Bengal. Arrangements are being made for rearranging the collection.

Though not so completely as we could wish, yet some work has been done in the department of meteorology; and with the aid of Government, which has to a considerable extent already been afforded, it is to be hoped that a system of meteorological observations may be carried on throughout the country that shall be of service and capable of rendering trustworthy conclusions on this all-important subject.

In 1864, our Secretary, Mr. Blanford, drew up a report on the subject of the Asiatic Society's action in promoting meteorology, which was submitted to Government. In March 1865, Sir Cecil Beadon appointed a Committee, consisting of three members of the Society, viz. Col. Gastrell and Messrs. Blanford and Obbard, to arrange and carry out a plan of meteorological observation for the protection of the port, by enabling the shipping to have warning of approaching storms. The Committee established a series of stations, beginning with Saugor Island, from which telegrams were received twice a day, and one of the members undertook the examination and revision of these reports, and warned the shipping through the Master Attendant, whenever the reports indicated approaching mischief. The most noticeable result of the Committee's labours is the preparation of a report on the cyclone of 1864, by Col. Gastrell and Mr. Blanford, which was published by the Bengal Government and distributed to a large number of scientific bodies and eminent meteorologists in Europe, America, and elsewhere.

In April last the executive work of this Committee was transferred to a paid officer, (Mr. Blanford) and steps are now being

taken to extend the system to a considerable number of stations throughout Bengal, and we can only hope that such encouragement and aid may be held out, as to render the scheme not only of scientific value, but also of actual utility in warning and preparing the people throughout the province generally, of the approach of such terrible visitations as the cyclones of 1864 and 1867. There can be no doubt that the practical value of such an arrangement was prominently shewn in the case of the late cyclone, where the shipping being duly warned, were enabled to make preparations against the hurricane. Could such warning have been more general, it is impossible to say how much of life and property might not have been preserved. The Committee have recommended to Government that certain stations in the city, the Dockyards or near the river, shall be appointed, where warning and danger signals may be shewn when the approach of a storm is apprehended. Speculation on the past is, however useless, unless it be with the view of profiting for the future—and while we feel regret that comparatively little has yet been done, we may look forward with hope to a wider and more direct extension of this application of science to practical purposes and ends. In the N. W. and Punjab, paid officers were appointed as meteorological reporters, about the same time as the Committee was appointed in Bengal, and two annual reports have already been published. In Madras, I may observe, a system of meteorological observations is being carried out, which appears worthy of imitation. It is systematic from the commencement, and the whole being placed, from the outset, under one well qualified meteorologist, the greatest care is given to the comparison and proper testing of the instruments. The observers are trained to their work, and have it alone to attend to. All stations will be furnished with complete sets of instruments, and no registration will be attempted until these preliminaries are satisfactorily completed. It is the attempt, no doubt unavoidable, to commence with imperfect means, that has rendered much of the work hitherto performed in Bengal, the North West Provinces, and the Punjab of less value than could be desired. The meteorological officers, both of Bengal and the N. W. Provinces are most anxious to give to their own departments, that completeness and uniformity, that constitute the great merit of the Madras system, and to adopt an uniform system of registration in all

the Presidencies; while they are fully awake to the importance of working cordially together. There is every reason therefore to believe, that with the support of Government, a system of meteorological registration will before long be adopted throughout the greater part of India, possessing the all-important characteristics of uniformity and trustworthiness. The system of storm-warnings is at present peculiar to Calcutta, where indeed it is of most importance. In the late cyclone, the reporter was able to give notice to the Master Attendant, about eight or nine hours before the wind became violent, and eleven hours before the storm reached its maximum. Some correspondence on the subject of the meteorological reports during the late cyclone, will probably be laid before the next ordinary meeting.

The Asiatic Society has thus inaugurated a system of meteorological observations and registration, and has long published the reports which are kept in the Surveyor General's office and for which we herewith offer our acknowledgements; it has also been acting conjointly with Government in aiding the furtherance of the important subject of registration. I trust that neither failure of scientific energy of the observers on the one hand, nor lack of aid on the other, will prevent the development of what is so much needed, a thoroughly scientific and practical system of meteorological observation and registration throughout India.

And here I think I may take the opportunity of offering a remark (as germane to the subject) on Physical science generally, as represented in our educational establishments in India. The immense development of the Physical sciences has been declared by the Duke of Argyll to be "characteristic of our times," and truly we might be glad if we could apply this remark to India; for if ever we propose to educate the people thoroughly, to lead them from lower to higher truths, it can only be by making them acquainted with the subjects included under the comprehensive term of "Physical Science." If superstition and prejudice are to be uprooted as a preparation of the way for more enlightenment, and knowledge of a higher kind, it can only be by imbuing them with a comprehension of those general laws by which all physical phenomena are regulated. I before remarked that one object of this Society,

and one that has perhaps been too little heeded, is the advancement of Physical Science in this country. It is not here, though, that the elementary knowledge could be imparted, but in the schools where the youthful mind is trained to observation and comprehension of laws, the results of whose operations are recorded and verified here. And yet, I regret to say, the only means of teaching even the rudiments of Physical Science in this Presidency, (I know not how it is in the others,) are such as are afforded by one chair in the Presidency and those in the Medical College in Calcutta, whilst in the N. W. not a single chair of Physical Science, with the exception of that at Roorki, which is restricted to a limited class of Engineering students—exists. It appears to me that this is a subject worthy of consideration, not merely by this Society, but by the educational authorities, with a view to its being remedied; for not only do we regret the paucity of actual means, but it is to be feared there is a tendency to discourage even those that already exist, and to discontinue the teaching of physical science at all. This is surely opposed to sound educational policy, especially in the case of a people like the natives of this country; and it certainly is at variance with the spirit of the University scheme, which has invariably insisted on its adoption.

The Journal of the Society has been regularly published, that is to say, two Parts of each series, (the Physical Science and the Philological) have appeared under the supervision of their respective editors. There has been delay in their issue, but it was unavoidable. The cost of bringing out the Physical Science Part has been unusually heavy this year, and it may perhaps be necessary to delay the issue of the next number. The articles are all interesting, and some of them have been read at the monthly meetings. I have not time for more than simple allusion to them by name: they are "On the Initial Coinage of Bengal," by E. Thomas, Esq.; "Notes On the Jumma Musjid of Etawah," by C. Horne, Esq. C. S.; "Translation of an Inscription copied in the temple of Nakhon Vat or the City of Monasteries, near the capital of ancient Kambodia," by Dr. A. Bastien. In the 2nd No. "Notes on Suraj-ood-dowlah and the town of Moorshedabad, taken from a Persian manuscript of the *Tarikh i Mançuri*," by H. Blochman, Esq. M. A.; "Notes on Buddhist Remains near Mynpoorie," by C. Horne, Esq. B. C. S.; "Notes on the Carvings on the Buddhist post-rails

at Buddh Gaya," by the same author; "The Pegu Pagoda" by Capt. H. A. Browne, Deputy Commissioner of Rangoon; "On the Antiquities of Bagerhat," by Babu Gourlass Bysakh, Deputy Magistrate and Deputy Collector, Manbhoom; and "On the Translation of Indian Alphabets in the Roman character;" by F. S. Growse.

In the Physical Science section, edited by the Natural History Secretary, we have several elaborate papers under the following headings "Experimental Investigations connected with the supply of water from the Hooghly to Calcutta," by D. Waldie, Esq.; "Kashmir, the western Himalaya, and the Afghan Mountains," being a geological paper, by Dr. Albert Verchere, with a note on the fossils by M. Edouard de Verneuil; and "Contributions to Indian Malacology, being a List of Estuary shells collected in the delta of the Irawady in Pegu, with descriptions of the new species." By W. T. Blanford, Esq.

The Physical Science Part of the Journal bids fair to attain to as high a place in the estimation of the scientific world, as that the Literary and Archæological has so long held in its own department.

It would be impossible for me to give even an abstract of these papers in the short space of time available for an address of this nature; there can, however, be no doubt that the selection has been well made, and that each of them is a valuable contribution to the annals of science.

You have learned, from the Philological Secretary, what the proceedings of the Bibliotheca Indica have been during the past year. Its labours have progressed with the usual ardour displayed by the learned Philologists who conduct the publication of the oriental works: which render it so much valued, not only in India, but by oriental scholars in Europe. The death of one of its most learned editors has interfered with the publication of the Sanscrit works; but those in Persian have appeared with the usual vigour. It is unnecessary for me to say more on a subject that has already been so fully reported on by the gentleman under whose guidance it is conducted.

You have heard, from the annual report, a detailed account of the state of our finances, which I am glad to say, though not in a very prosperous condition, are better than they were last year. The indication of the necessity for economy, however, is unmistakeable; and the

Finance Committee will need to exercise most rigid supervision over the expenditure, to keep within bounds and preserve the Society from debt.

The actual condition, it appears, is about as follows. We have Rs. 3,487 in the Bank of Bengal, a small sum of Rupees 38 in hand; Government securities to the extent of Rupees 2000, and an uncertain amount, said to be about Rupees 9,070 of outstanding dues; making a total of Rupees 14,598. Great part of this no doubt will be gathered in in time, but some of it I fear must be written off to Profit and Loss. Against this, we have debts of Rupees 7,450, the main items being for printing; Rs. 4,974 to one Press. This leaves us free from difficulties, and though not rich, we are certainly not embarrassed by any immediate pecuniary anxiety. By strict supervision on the part of the Finance Committee, and economy in the Council, I trust that we shall be able to continue without getting into debt, and with the increase of Members which may be anticipated, I hope next year may see the Society more prosperous than it has been.

I should omit an important part of my duty, were I to fail, on this occasion, to express the thanks that are due from the Society to the Honorary Officers; to Mr. Blanford, and to Mr. Ormsby who officiated during Mr. Blanford's temporary absence—to Dr. J. Anderson, the Natural History Secretary; to Babu Rajendralal Mittra the Philological Secretary; to Colonel Gastrell, the Honorary Treasurer, and to Mr. Medlicott who acted during Col. Gastrell's absence. To the exertions of those gentlemen, and especially to those of the General Secretary Mr. Blanford, we mainly owe the Society's prosperity. Their labours are very arduous, and must encroach seriously on such leisure as may be left by their public duties. How successfully these good offices have been performed, is proved by the present state of the Society; and in its name, I now express our warmest acknowledgements. In recognizing our debt to the honorary officers, I must not forget our obligations to others. The Assistant Secretary and Librarian, and his Assistant have conducted their duties with much zeal and energy as well as with advantage to the Society, and therefore merit our best thanks.

The Establishment generally has, I believe, given satisfaction to the officers of the Institution.

I must now conclude, as I fear I have already trespassed too long on your patience. I can only beg of you to overlook the imperfect

way in which I have performed my part of the work, and express a hope that under my successor, the progress of the Society may be all that you can desire. I am most grateful for the consideration that would have allowed me to retain the chair I now vacate; but I feel more than ever the force of what I said, when I accepted the office, that it should be held by some one with more leisure and more special aptitude than I have for the work. I feel that this, almost the only scientific Society on this side of India, should have great aspirations, as I believe it has a great work to perform. Its object is to develop the scientific resources of India, and to make them known to Europe, to influence both countries for their mutual good. How much this implies, I cannot now stop to speculate.

To preside over a Society with such aims is, I repeat, the work of those who represent philological or physical science, and I am glad to think that I make over my trust to one so eminently fulfilling this condition. My own interest in the Society of which I am now an old member, will remain unabated, and I shall look forward with confidence to its rise to a point of equality among other similar Societies in Europe, feeling sure that if it be conducted in accordance with the Founder's wishes, the ends he looked for, will certainly be attained.

Dr. Fayrer then vacated the chair, which was taken by the Hon'ble J. B. Phear.

The meeting then resolved itself into an ordinary monthly meeting.

Ordinary Meeting.

The minutes of the last meeting were read and confirmed.

The following presentations were announced—

From Dr. T. Anderson, Superintendent, Botanical Gardens.

1. A copy of Mr. Kurz's "Report on the vegetation of the Andaman Islands."

2. From Dr. Franz Steindachner, through Dr. F. Stoliczka: four pamphlets, viz.—

Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859: Zoologischer Theil; Erster Band.

Reptilien.

Do. do. Amphibien.

Ichthyologische Mittheilungen (IX).

Über einige Fische aus dem Fitzroy Flusse bei Rockhampton in Ost Australien.

3. From Captain T. C. Anderson, two pamphlets, viz.—“A few words about two Andamanese lads;” and “Last words of a few Celebrities.”

4. From the Rev. C. H. A. Dall; Gover’s “Uniform Meteorology for India.”

5. From H. Blochmann, Esq. M. A.; The Persian Metres by Saifi, and a treatise on Persian Rhyme by Jami.

6. From Dr. Leitner through Mr. Grote; “Results of a Tour in Dardistan, Kashmir, Little Tibet, Ladak, Zauskar, &c.” Vol. 1 part 1.

7. From Babu Kanayalala Dea; The Indigenous drugs of India.

8. Letters from Major F. B. Norman, H. Beverley Esq. C. S. C. V. Bradford, Esq. and Bábu Bholanatha Mallika, intimating their desire to withdraw from the Society, were recorded.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected as ordinary members.

Bábu Rákháladása Háldár.

J. Boxwell, Esq. C. S.

9. The following gentlemen were named for ballot as ordinary members at the next meeting.

Major Edgar Clark, Bengal Staff Corps; proposed by Captain A. D. Vanrenen, seconded by Colonel J. E. Gastrell.

John Kavenagh, Esq. Assistant Superintendent Survey and Settlement officer, Oude; proposed by Captain A. D. Vanrenen, seconded by Colonel J. E. Gastrell.

Gordon Robb, Esq.; proposed by Mr. H. Blochmann, seconded by Mr. Sime.

L. H. Lees, Esq. M. D. Assistant Surgeon, Calcutta; proposed by Dr. Collis, seconded by Mr. J. M. Scott.

The Council recommended the following alteration in the rules of the Society.

That to rule 43, the following words be inserted after the words “entitled to vote,” “*nor shall his name be entered on the member roll.*”

The Council recommended that the following gentlemen be elected as Honorary Members of the Society.

Dr. T. Thomson.

General A. Cunningham.

Professor Bápudeva S'ástrí.

Also that the following gentlemen be elected corresponding Members of the Society.

Professor C. Holmboe, Christiania.

M. F. H. Foucaux, Professor of Sanskrit, College de France, Paris.

The Philological Secretary drew the attention of the members to certain valuable Sanskrit manuscripts lately purchased for the Library.

He said that during a recent tour in the North West, he had opportunities of examining a great number of ancient MSS. belonging to pandits and others, from which he had selected 169, which he thought were interesting. Among them were 57 Vedic works, including either portions of the Vedas or commentaries on and exegeses of the Vedic rites. Regarding Indian philosophy, there were 11 works on the Vedánta, 8 on the Mimáñsá, and 22 on the Nyáya. There were besides 2 Tantras, 3 grammars, and several on law, metre, rhetoric, astronomy, &c. Most of the works were scarce and new to the Society's Library.

They were all of some age, and many had been read by generations of Pandits, which had led to their being very carefully corrected. A commentary on the Taittiriya Áranyáka was nearly 300 years old, and of rare accuracy. A copy of the Uhya Gána of the Sáma Veda bore date the 1652 Sañvat = 1598. A. D., and was 270 years old; a codex of the Panchaviñs'a Prapáthaka of the same Veda was 343 years old, being dated 1581 S. = 1525 A. D. Considering that *chartæ bombycinæ* or cotton paper MSS. in Europe, notwithstanding the advantage of a favourable climate, were generally not more than four or five centuries old, this MS. may be valued for its great age. No doubt there were many Sanskrit MSS. extant older than this, and mention is made in Dr. Weber's catalogue of the Berlin Library, of a codex in the Chambers' collection, which was 489 years old (S. 1435), but those were mostly on palm leaves, which, like the parchment and vellum MSS. in Europe, generally last considerably longer than those that are written on paper.

The Philological Secretary read the following Note on a MS. English translation of the Mahábhárata belonging to the Society.

In Mr. Wheeler's interesting "History of India," mention is made of "the discovery of a manuscript translation of the more important portions of the Mahá Bháratá, which was lodged in the Library of the Asiatic Society of Bengal many years ago under a wrong title; and which," it is said, "there is reason to believe, was drawn up by the late Professor H. H. Wilson" (p.vii) As this MS. has supplied the bulk of the extracts published in Mr. Wheeler's work, a short account of it will perhaps not be uninteresting to the Members of the Asiatic Society.

The MS. is a foolscap folio, and was originally half bound in calf. The first eight folios are blank, and bear the late East India Company's water-mark stamp, and the date 1813. The first blank page has, in pencil, the words: "Translation of the Bagavitá, a Sanskrit Religious Book;" then, in a new line, the words "Enquire of Mr. Charles Wilkins India House," and a little below, in ink, the words "Index &c. N. B. The Gita commences at sheet 165." These notes evidently led to the work being taken for a translation of the G'itá and to its being entered in the Society's Catalogue under that title.

Interspersed in the volume, and at the end, there are several sheets of blank paper of 1813 and 1814. But the MS. itself is written on Government paper of an earlier date, viz. 1809 and 1810. The writer, who seems from the nature of his stationery to have been a Government servant, wrote his work on loose sheets, dating and numbering each sheet as he went on, and then got the whole bound in 1816. At that time, some sheets were found so written, that they could not be stitched without injury to the writing, and these, therefore, were put in recesses made by joining with wafers two blank leaves into the form of a case. Small slips containing notes have been at different places, pasted on the pages, but the number of these is not large. One of these slips is written on the fly-leaf of a private letter which contains the remnant of the address, N. B. Hal—(?) A little slip pasted on this, is another portion of the same letter, and has the words: "returned.

I am, Dear Sir,

Truly yours."

The note written on this slip bears date the 7th July 1816. Another fly leaf of a letter inserted opposite the 102nd sheet and first noticed by Mr. E. C. Bayley, has

“Mrs. Halh [ed ?]
20 Charle [s street ?]
Cavend [ish Square ?]”

The total number of written sheets included in the volume is 185. Of these the first ten are not marked, the numbering commencing with the eleventh. The first page bears date the 12th June, 1812, and contains a number of chronological notes which were written long after the text had been commenced. The upper portion of the second page is dated 24th February, 1812, and the lower portion 29th May, 1812, the third page has 26th May, 1811. The fourth and the fifth pages have no dates, but the 6th is dated 12th June, 1811, and all the three, I imagine, were written on the last mentioned day. These also contain notes by the translator, with references to his text and marginal Persian figures, probably to indicate the pages of some Persian original. The 7th page has for its heading the words “General Index to the Mahabharata, made by Vasant Rae Káet, in the 31st year of Aurangzeb. The pages answer to Dr. Wilkin’s great Persian folio.”

The Index commences with the churning of the ocean as described in the *Adi Parva* of the *Mahábhárata* with a reference, in Persian figures, for details, to page 17 of Vasant Rae’s text, and in English figures to the translator’s folio 145. The Index is then carried on consecutively. The English translator commenced this part of his work on the 8th May, 1811, and writing daily from 1 to 3 pages, completed it on the 28th of May of that year, i. e. in 20 days, the last reference being to p. 706 of the Persian text. This Index covers 17 folios. Following it, there are a number of blank leaves, after which is inserted a small map of India printed for the “East India Register,” without any tracing or mark of any kind to shew that the translator had worked on it in any way to illustrate his text.

Facing the map is the title page, bearing in large letters the words “Extracts, Translations, &c. from the Mahabharat, Persian copy.” The extracts cover 175 sheets of paper, written in a cramped, small hand, in double columns. The lines are very close to each other, and very much disfigured by blottings, corrections and interlineations; which, aided by the discoloration and decomposition of the ink and paper in many places, render the whole very difficult to read. The proper names and important Indian words are, however, written

in large characters, and some words have their corresponding Persian version given in Persian letters. References to the Persian text are made with Persian figures. Quotations from the Persian text also occur frequently, and occasionally Greek and Hebrew words are given in their native characters, but in the whole range of a bulky book, avowedly a translation of a Sanskrit work, Sanskrit letters occur only fifteen or twenty times ; shewing clearly that the translator depended entirely on his Persian text, and seldom referred to the Sanskrit original. Evidently he was not a Sanskrit scholar, and was unable to make any such reference. On one occasion he did so to ascertain the 160 (sic in MS.) names of the sun, but owing to his want of knowledge of the Sanskrit, he converted 108 names into 115. The error was so palpable, that he could not overlook it, and yet unable to correct it, he excused himself in a note in which he says : “ In consequence of not knowing which words are simple and which are compounds, I have here made the names to be 115 instead of 108.” In a subsequent note he says : “ Perhaps the whole together may fully make up the number 160 as mentioned in the Persian translation.”

The translation was undertaken, it appears from a date on the 5th page, on the 18th October, 1810, and carried on with occasional short interruptions to the 3rd July, 1813, when it was dropped at the middle of the fifth day's battle. The extracts, however, are not consecutive, but taken at random from different parts of the Mahábhárata. The work of each day is separately dated, from which it appears that the translator did not generally write more than 2 or 3 pages, and often not more than a page per day. This fact, coupled with the corrections and the interlineations above referred to, leaves no doubt about the MS. being the original writing of the translator and not a copy.

The work is avowedly made up of “ abstracts and translations,” principally from what is called “ the great folio,” meaning Vasant Rae's Persian version, and occasionally from a MS. which is indicated by the words “ Library copy.” Neither of these originals is now accessible to me, and in their absence, it is impossible to determine what portions of the MS. are abstracts, and what are translations from those works. I have compared different parts of the translation with Abul Fazl's Persian version, of which the Society possesses a good MS. in two volumes, but I can trace no correspondence. But

whether abstract or translation, certain it is that no portion of the work is a translation or even a fair paraphrase of the Sanskrit original. The skeletons of the different stories and episodes are no doubt given, but they are mere skeletons artificially articulated, and no more. Of the muscles and integuments which make up the figures and the spirit which vivifies them—of the details and descriptions which fix the character of the stories—they have none. To convey an idea of the extent to which the process of abridgment or condensation has been carried on, I may mention that the story of S'akuntalá i. e. of the birth of Bharata, which is the first extract quoted in Mr. Wheeler's book, as given by Vyása occupies 13 quarto pages of closely printed Sanskrit in the Society's edition of the Mahábhárata, and extends to 320 stanzas. In Mons. Hippolyte Fauche's French translation, this subject takes up about 33 octavo pages (pp. 297—330) and in Abul Fazl's Persian version 13 demi folio pages (pp. 47 b to 53 b), but in Mr. Wheeler's book it extends to only one page and two and half lines. All the other extracts are equally condensed and contracted, and as this abridgement was effected once by an uncritical Hindu translator who prepared his Persian version for the entertainment of Muhammadan readers, without the shadow of an idea as to what are the requirements of true history, and then by an Englishman who abstracted as much as he thought proper from the Persian without consulting the original Sanskrit, the result is such as to be utterly untrustworthy for critical analyses of the ages of the different portions of the Mahábhárata. In short, Mr. Wheeler's texts are abridged translations, of abridged translations, which, owing to that gentleman's want of familiarity with the Sanskrit, have not been so compared with the original as to render them reliable data for history.* I am sorry to be obliged to make this remark with reference to a book which has been well received by the reading public, and which is unquestionably very interesting, but for the sake of truth I cannot help it.

Of the history of the MS. I have not been able to ascertain any thing. No mention of it occurs in the lists of presentations to the Library published in the *Researches* and the *Journal*, nor in the MS. proceedings, all which I have carefully examined. That the MS. is

* Since writing the above I have been assured by Mr. Wheeler, that he had some of the more important extracts compared with the original Sanskrit by a young Sanskrit scholar Bábu Avinása'chandra Ghosha, and that some are independent translations.

not the work of Professor Wilson I have no hesitation in saying. It is true that the late Professor alludes, in his "Essays on the Purāṇas," (Journal Royal Asiatic Society V. p. 64), and also in his Introduction to Professor Johnson's "Selections from the Mahābhārata," to an abstract of the great epic prepared under his superintendence, but this is not that work. It was in 1822 that the Government sanctioned an establishment of two paṇḍits and 3 or 4 native assistants—young men brought up in the then recently established Hindu College—who, under the superintendence of Dr. Wilson, prepared abstracts of nearly all the Purāṇas, of some of the Upa Purāṇas, and of the Mahābhārata. Among the assistants who were engaged in this work, I may name Bābu Kās'īprasāda Ghosa, Bābu Tārāchānd Chakravartī, Bābu Chandras'ekhara Deva and Bābu Heḍambanātha Thākura. The establishment was broken up in 1829. Copies of the works produced by these assistants, except the Mahābhārata and the Rāmāyana, exist in the Society's Library, but their style is so very different that, had the evidence of the dates been wanting, that would have of itself sufficed to shew that the MS. under notice is not one of them. It may be said that Wilson had prepared the translation himself long before the translation establishment was sanctioned or thought of. But such a position is not at all tenable. In the first place, Wilson nowhere says anything of his having ever prepared such a version, which he would, for certain, have done in his "Essays" and the Introduction above alluded to, if he had done so. Secondly, Wilson had acquired a thorough knowledge of the Sanskrit language in 1812, when he rendered into English verse the charming poem of the Meghadūta or "the Cloud Messenger," and it is impossible to suppose that he would have taken a Persian version of the Mahābhārata for his labours when he had the Sanskrit original open before him—the more so as he was a far better scholar in Sanskrit than in Persian. And thirdly, the style in which Wilson wrote, is so different from the writing of the MS. that that of itself is enough to settle the question. There are in the archives of the Society, a number of draft letters, minutes, and circulars, written by Wilson from 1816 to 1832, during the time he was Secretary to the Society, and these I have carefully examined, and they appear to me as unlike the writing of the MS. as they well could be. I have also examined the hand-writings of Colebrooke, Wilford and Mr. W. Blacquire, who was for a long time Government

translator and an active member of the Society, but they differ so much from the MS. that I have not the slightest suspicion of any of those gentlemen being the author of it. Wilkins published his translation of the Bhagavadgītā from the Sanskrit in 1785, and it would be absurd to suppose that he would do the same work over again, and that very imperfectly, from the Persian version, in 1812.

The question may be asked, are the scraps of the private letter noticed above portions of a letter which had been addressed to the translator or were they mere scraps of waste paper which he took up to write a note upon? Ordinarily people so use unimportant letters addressed to themselves, but seldom think of picking up other people's letters for such a purpose. Arguing on this theory, the name of the author of our MS. would be N. B. Hal — (?) Now, in the list of members of the Society from 1810 to 1816, the only name which has the initials N. B. is Edmonstone of the Civil Service, but none beginning with H. The second scrap suggests Halhed, the author of the Gentoo Code who had N. B. (Nathaniel Brassy) for his initials, but his name does not appear in the Society's lists for the second decade of this century, and I cannot ascertain if he was alive, and if so, in India at the time when the translation was prepared. His Gentoo Code was published in 1776, from which time to 1816 is a long period for a European to remain in this country. But from the dedication of his work to Warren Hastings, Halhed appears to have been very young in 1775—for he says in it: "I find myself involuntarily held forth to the public as an author, almost as soon as I have commenced to be a man." Supposing that he was then 23 or 24 years old, he would be about 60 when the translation was undertaken. This would not be too advanced an age for a European to indulge in light literary recreation. But judging by the directions in the address of the second letter he must have been then in England, whence his MS. was subsequently brought out to India. The use of the East India Company's foolscap paper suggests the probability of the work having been written in India, and if so it must have been by a son or a relative of his. I learn from Mr. Bayley that a Mr. N. J. Halhed entered the Civil Service in 1804. "In 1807 he was an assistant to the Judge and Magistrate of Meerut; in 1808 Assistant to the Magistrate of the 24-Pergunnahs; and in 1812, Assistant Judge of Burdwan, where he remained till 1814. He then went to Pooree, in

1815, and to Agra at the end of that year; thence to Murádábád in 1820; and to Calcutta in 1827 as (officiating supernumerary) member of the lower Board of Revenue. He became Commissioner of Revenue and Circuit for Arracan in 1827, and entered the Sudder Court in 1836. He died in August 1838." He was possibly a son of the elder Halhed, and the author of the translation, and somebody to whom the name of the elder was familiar by mistake addressed him N. B. instead of N. J. It is more probable, however, that the elder was the translator, whose work was sent out to the son for some comparison or other.* This appears the more likely, as Sir Charles Wilkins was in the India House at the time when the translation was made, and his Persian MS. which supplied the text, must have been in England.† At any rate that the MS. is the work of a Halhed may be taken for granted. I must confess that this opinion is based on the suppositions, 1st, that the private letters were addressed to the translator and his wife, and, 2nd, that the syllable Hal and Halh on those letters are remnants of Halhed and not of any other name beginning with the syllable Hal or Halh; and if a conjecture founded on such data be not admissible, I must leave to others the task of tracing the author of our MS. which must for the present remain a literary foundling.

The receipt of the following communications were announced—

9. From W. Herschel, Esq. through Mr. A. Grote.

"Description of a Hindu Temple converted into a mosque at Gageneshwar, zillah Midnapore."

10. From W. T. Blanford, Esq. "Contributions to Indian Malacology, No. 9."

* I have lately had an opportunity, through the kindness of Mr. Grote, of examining, in the Record Room of the Board of Revenue, two minutes by Mr. N. J. Halhed, bearing dates the 1st and 8th June 1827, respectively. They are in the hand writing of a copyist; but they contain the signature of and many corrections both in pen and pencil by Mr. Halhed, and the style in which they are written is quite different from that of our MS.

† The date of some of the paper used in the MS. is in favor of this supposition. Some of the earlier sheets were written in June 1810, on paper which had been manufactured in 1809, but which could not, in the olden days of slow-sailing Indiamen, be available in India at that time, though it would be easily accessible at the India House.

SANSKRIT MANUSCRIPTS PURCHASED AT BENARES.

सङ्ख्याः	ग्रन्थानां नामानि	ग्रन्थकारनामानि	अक्षरभेदाः	पत्रसङ्ख्याः
१००१	तत्त्वदीपिका टीकासहिता	श्रीवत्सभः	ना०	१३१
१००२	भेदाधिकारसत्क्रिया			
	भेदाधिकारटीका	नारायणमिश्रः	ना०	६३
१००३	सोमप्रयोगः		ना०	५८
१००४	स्मृतिचरणं (पूर्वार्द्धम्)		ना०	१०८
१००५	अतिरात्रः		ना०	२०
१००६	अनुमानदीधितिष्याख्या			
	२४ पत्रात् परं खण्डिता . . भवानन्दः		ना०	३८५
१००७	ब्रह्मयामकतन्त्रम्	महाभैरवः . .	ना०	१२०
१००८	पञ्चपादिका (शेषे खण्डिता)		ना०	६४
१००९	माध्यन्दिनोपनिषद्भाष्यम्			
	(शेषे खण्डितम्)	वासुदेवब्रह्म . .	ना०	११८
१०१०	भाट्टदीपिकाप्रभावणी	शम्भुभट्टः . .	ना०	८९
१०११	विष्णुयागपद्धतिः	अनन्तदेवः . .	ना०	२८
१०१२	ऐतरेयब्राह्मणभाष्यम्	सायनाचार्यः	ना०	५५९
१०१३	आङ्गचन्द्रिका	वैद्यनाथः . .	ना०	६३
१०१४	विशेष्यतावच्छेदकप्रकारक-			
	ज्ञानकारणत्वविचारः		ना०	९०
१०१५	शेषार्था सटीका	शेषकर्तृकं मूलम् राघवानन्दोया टीका	ना०	४५
१०१६	कुण्डनिर्माणाश्लोकविवृतिः	रामवाजपेयी	ना०	३८
१०१७	दमयन्तीकथा (खण्डिता)	भट्टहरिः . .	ना०	३९

सङ्ख्याः ग्रन्थानां नामानि पञ्चकारनामानि अक्षरभेदाः पञ्चसङ्ख्याः

१०१८ प्रायश्चित्तकुतूहलः, अनुक्रम-

शिकासहितः	रघुनाथभट्टः	ना०	१०१
१०१९ आचारदीपः	नागदेवोपाध्यायः	ना०	७२
१०२० हेतुतावादः... ..	ना०	२६	
१०२१ षड्विंशब्राह्मणः	ना०	३८	
१०२२ तत्त्वदीपप्रकाशावरणभङ्गे			
शास्त्रार्थप्रकरणम् ..	पीताम्बरः ..	ना०	१२४
“ तत्त्वदीपप्रकाशावरणभङ्गे			
सर्वनिर्णयप्रकरणम् ..	पुरुषोत्तमः ..	ना०	६२
१०२३ पूर्वकर्मकाकरः (खण्डितः ६८ परं) कमलाकरभट्टः	ना०	१२५	
१०२४ तर्कसमयखण्डनः	वेशीदत्तः ..	ना०	८
१०२५ तन्त्रमन्त्रः	महादेवः ..	ना०	८६
१०२६ बौधायनचयनसूत्रम् ..	बौधायनः ...	ना०	२३
१०२७ सर्वसङ्ग्रहवाक्यम्... ..	ना०	३५	
१०२८ प्रासादशिवप्रतिष्ठाधिकारः कमलाकरभट्टः	ना०	६१	
१०२९ सप्तहोत्रप्रयोगः, आभिष्टोमीयः... ..	ना०	१०१	
१०३० आतिथ्यामः... ..	ना०	२३	
१०३१ वंशब्राह्मणः... ..	ना०	८	
१०३२ शब्दप्रमाणविचारः (खण्डितः)... ..	ना०	३३	
१०३३ भवानन्दीत्याख्या, अतिरेकिपर्यन्ता महादेवः	ना०	३७२	
१०३४ काव्यतत्त्वविवेचनम् ...	रघुनाथभट्टः	ना०	१२३
१०३५ कल्पकारिकासारः ..	मयूरवाहः ..	ना०	४७
१०३६ कान्येष्टिका	ना०	५०	
१०३७ स्मार्तनिष्कृतिपद्धतिः ..	दिवाकरः ..	ना०	३८
१०३८ प्रायश्चित्तश्लोकपद्धतिः ..	ना०	७७	
१०३९ गायत्रीपुराणप्रयोगः ..	श्यामभट्टः ..	ना०	७

क्रमां	ग्रन्थानां नामानि	ग्रन्थकारनामानि	अक्षरभेदाः	पत्रसङ्ख्या
१०७०	त्रिभाष्यरत्नः	ना०	८२	
१०७१	विवरणप्रमेयसङ्ग्रहः (शेषे खण्डितः)	ना०	१२४	
१०७२	नव्यमतवादाद्यर्थः	ना०	१०	
१०७३	अनुमितियरामर्शहेतु- हेतुमद्भावविचारः हरिरामतर्कालङ्कारः	ना०	५६	
१०७४	सृष्टिसंस्कारवादः	ना०	१३	
१०७५	अनुमितिर्विचारः	ना०	३३	
१०७६	अद्वैतमकरन्दः	ना०	२६	
१०७७	प्रायश्चित्तसदोदयः .. सदारामः ..	ना०	३८	
१०७८	मायत्रम् भवामयनीयम्	ना०	३१	
१०७९	सामविधानम्	ना०	२४	
१०८०	आत्मबोधः	शङ्कराचार्यः	ना०	४०
१०८१	आद्यलङ्केतुकीप्रयोगः ...	रामचन्द्रयज्वा	ना०	७६
१०८२	संशयानुमितिर्विचारः (खण्डितः)	हरिरामभट्टा- चार्यः ..	ना०	१७
१०८३	अनुमितियरामर्शवादः ..	रघुदेवभट्टाचार्यः	ना०	१५
१०८४	अनुमितियरामर्शविवेकः	ना०	२६	
१०८५	आहिताग्निप्रेताधानप्रयोगः	आम्बिकायनः	ना०	११
१०८६	बृहस्पतिशान्तिः, संस्कार- कौस्तुभोक्ता	ना०	५	
१०८७	आपस्तम्बसूत्रध्वनिता ..	भास्करमिश्रः	ना०	३६, २३
१०८८	विवरणोपन्यासः	ना०	७१	
१०८९	कोटिहोमप्रयोगः	रामकृष्णभट्टः	ना०	८०
१०९०	अनुयागपद्धतिः, वा पुण्याह- वाचनादिप्रयोगः ..	आनन्दतीर्थः	ना०	१०५
१०९१	इतरवादः	ना०	३	

सङ्ख्याः	ग्रन्थानां नामानि	ग्रन्थकारनामानि	अक्षरभेदाः	पत्रसङ्ख्याः
१०६२	बौधायनसोमसूत्रम्...	बौधायनः ..	ना०	५६
१०६३	अनेकार्थवृत्तिः (आद्ये शेषे च खण्डिता)...	.. ..	ना०	१८५
१०६४	महामिसर्व्वस्वः ..	वासुदेवदीक्षितः	ना०	१०६
१०६५	लीलावत्युदाहरणे श्रेणी- व्यवहारः...	वीरेश्वरः ..	ना०	२७
“	लीलावत्युदाहरणे अङ्ग- व्यवहारः...	कृपारामः ..	ना०	८०
१०६६	मृच्छसूत्रम् ..	आश्वलायनः..	ना०	४४
१०६७	शिवसहस्रनाम ..	भट्टश्रीहरिनाथः	ना०	१०६
१०६८	वृत्तिवार्त्तिकम् ..	.. ..	ना०	१२
१०६९	परामर्शवादः ..	.. ..	ना०	५०
१०७०	कौशीतकीब्राह्मणोपनिषत्	शङ्करानन्दः..	ना०	७४
१०७१	मीमांसावार्त्तिकम् ..	कुमारिलभट्टः	ना०	३६
१०७२	प्रायश्चित्तसारसङ्ग्रहः ..	नागोजीभट्टः..	ना०	६७
१०७३	लाट्यायनसूत्रम् ..	.. ..	ना०	११७
१०७४	परामर्शहेतुतावादः ..	महादेवपण्डितः	ना०	८७
१०७५	अमरकोषः, प्रथमकाण्डः क्षीरस्वामिटीकासहितः	अमरसिंहः..	ना०	४६
१०७६	वाणीभूषणः ..	दामोदरः ..	ना०	१६
१०७७	आपस्तम्बसूत्रवृत्तिः (शेषे खण्डिता) ..	भट्टरुद्रदत्तः..	ना०	२६, ६१
१०७८	विद्याविज्ञासः (शेषे खण्डितः) ..	.. ..	ना०	२६
१०७९	सिद्धान्तरहस्यः ..	मथुरानाथ- तर्कवागीशः	ना०	३६२
१०८०	सम्प्रदायप्रदीपः ..	गदाधरपण्डितः	ना०	५७

सङ्ख्या	ग्रन्थानां नामानि	ग्रन्थकारनामानि	अक्षरभेदाः	पत्रसङ्ख्याः
१०८९	सन्निकर्षवादः (खण्डितः)	ना०	२१	
१०८९	नव्यमतविचारः	ना०	४२	
१०८९	न्यायसिद्धान्तदीपः (खण्डितः) शशधरः ..	ना०	३६	
१०८९	बौधायनसूत्रभाष्यम् ..	सिङ्गनाचार्यः	ना०	१३६
१०८९	प्रातिशाख्यम्	सौनकः ..	ना०	३४
१०८९	महाव्रतम्	ना०	६६	
१०८९	वर्षछात्रम्, छात्रमहार्थवीयम् श्रीहरिनारायणः	ना०	१५३	
१०८८	अपूर्ववादः	ना०	१८	
१०८८	अवधूतगीता	दत्तात्रेयः ..	ना०	२०
१०८८	दशमायत्रपद्धतिः (शेषे खण्डिता) रामछात्रभट्टः	ना०	३६	
१०८९	सप्तशौचम्	ना०	५७	
१०८९	सुबोधिनीभाष्यम् (शेषे खण्डितं)	ना०	३५	
१०८९	आन्धजायनमृद्वपरिशिष्टः	ना०	२७	
१०८९	अमृतविन्दुः	चन्द्रः	ना०	४६
१०८९	शुक्लटीका (आपस्तम्बसूत्रटीका) करविन्दसामी	ना०	११५	
१०८९	आन्धजायनसूत्रभाष्यम् ..	अभिखामी ..	ना०	३१५
१०८९	अनुमानखण्डालोकः			
	(खण्डितः पूर्वं)	जयदेवमिश्रः	ना०	३३२
१०८८	प्रयोगरत्नः	नारायणभट्टः	ना०	१६६
१०८८	आशौचसङ्ग्रहः ॥ त्रिंशच्छ्लोकी ॥			
	पुस्तकद्वयम् । सटीकम् । निरुक्तिः	ना०	८, २६	
११००	वाजपेयशौचः (आदौ खण्डितः)			
	महाव्रतशौचः (शेषे खण्डितः)	ना०	१८, ४६	
११०१	मण्डपकुण्डसिद्धिः	विठ्ठलदीक्षितः	ना०	२७
११०२	सूत्रमुक्तावली	ब्रह्मानन्दसरस्वती	ना०	६
११०३	दादशाहशौचः	रघुनाथः ..	ना०	१७८

सङ्ख्याः	ग्रन्थानां नामानि	प्रत्यकारनामानि	अक्षरभेदाः	पत्रसङ्ख्याः
११०४	पशुको मैत्रावरुणप्रयोगः	.. ..	ना०	१५
११०५	प्रयोगदर्पणः (शेषे खण्डितः)	नारायणदोक्षितः	ना०	८६
११०६	ज्योतिष्टोमाग्निष्टोमादिपञ्चतिः	रामकृष्णः..	ना०	६८
११०७	मैत्रावरुणम् (आग्निष्टोमीयम्)	.. ..	ना०	२४
११०८	काशिकावृत्तिः (तत्र ७ अध्यायः खण्डितः, ४, ८ अध्यायौ नस्तः)	वामनः ..	ना०	४००
क११०९	ऐतरेयब्राह्मणपञ्चिका	.. .	ना०	३०
ख११०९	ऐ० ब्राह्मण-द्वितीयपञ्चिका	.. ..	ना०	४३
ग११०९	ऐ० ब्राह्मण-तृतीयपञ्चिका	.. ..	ना०	४४
घ११०९	ऐ० ब्राह्मण-चतुर्थपञ्चिका	.. ..	ना०	३४
ङ११०९	ऐ० ब्राह्मण-पञ्चमपञ्चिका	.. ..	ना०	४५
च११०९	ऐ० ब्राह्मण-षष्ठपञ्चिका	.. ..	ना०	३६
छ११०९	ऐ० ब्राह्मण-सप्तमपञ्चिका	.. ..	ना०	३४
ज११०९	ऐ० ब्राह्मणाष्टमपञ्चिका..	.. ..	ना०	३२
१११०	इथन्भाष्यम् (खण्डितम्)	सायनाचार्यः	ना०	१६२
११११	प्रयोगरत्नः.. ..	नारायणवाजपेयी	ना०	१२०
१११२	कुन्दोगप्रायश्चित्तम्	.. ..	ना०	६
१११३	कुण्डमार्तण्डः (सटीकः)	अनन्तदैवज्ञः	ना०	५४
१११४	सारसङ्ग्रहः.. ..	वरदराजः..	ना०	७२
१११५	हरितत्त्वमुक्तावलीटीका	खयस्यकाशः	ना०	७६
१११६	आम्बलायनकारिकाविवरणम्	नारायणः	ना०	२५१
१११७	इष्टकापूरणभाष्यम्	.. कर्कोटी ..	ना०	१७
१११८	गृह्यकारिका	.. भट्टकुमारिलस्वामी	ना०	७६
क१११८	उद्भगानम्	.. ..	ना०	१६०
ख१११८	तैत्तिरीयारण्यकम्....	.. ..	ना०	१५०
१११९	निर्वाणखितादीनि द्वादशोपादीनि..	..	ना०	

ग्रन्थानां नामानि

सङ्ग्रहसूक्ताः (प्रथमपत्रं नास्ति)

अवधूतस्तोत्रम्

निरञ्जनाष्टकम्

अच्युताष्टकम्

निर्वाणाष्टकस्तोत्रम्

निर्वाणदशकस्तोत्रम्

हस्तामलकस्तोत्रम्

कौपीनपञ्चकम्

आत्मपञ्चकम्

दक्षिणामूर्तिस्तोत्रम्

कष्ठीष्टसिंहस्तोत्रम्

द्वादशपञ्जरस्तोत्रम्

अधुवाक्यवृत्तिः

स्वरूपानुसन्धानस्तोत्रम्

महावाक्यसिद्धान्तस्तोत्रम् । अस्मिन् स्तोत्रे (१६-१७)

पञ्चयोरभावः ।

दशावतारस्तोत्रम्

आर्त्तत्राणस्तोत्रम्

गङ्गाधराष्टकम्

अवधूतगीता १ प्रकरणम्

आनन्दलहरी

आत्मानात्मविवेकः

विष्णुसम्बोधनस्तोत्रम्

आत्मविचारः

सोपानपञ्चरत्नमालास्तोत्रम् अक्षराचार्यः

धन्याष्टकस्तोत्रम्

पन्थानां नामानि पन्थकारनामानि
 शिवपञ्चाक्षरस्तोत्रम्
 मानसपूजा
 गङ्गाष्टकम्
 मणिकर्णिकास्तोत्रम्
 ध्यानन्दलहरी
 हरितत्त्वमुक्तावली । (अत्र पञ्चत्रयाभावः)
 गोविन्दाष्टकम्
 शुकाष्टकम् शुकस्वामी
 पञ्चायुधस्तोत्रम् शङ्कराचार्यः
 मनीषापञ्चकस्तोत्रम्
 भुजङ्गप्रयातस्तोत्रम्
 गुरोरष्टकम्
 ब्रह्मनामावलीस्तोत्रम्

महाराष्ट्रभाषायाम् ।

१११६क अनुमानार्थः ।

निद्रावृत्तिचा अर्थः ।*

यमदमादिविचारतपशीलः ।

त्रिविधसमाधिः ।

निर्विकल्पसमाधिः ।

* निद्रावृत्तेरर्थ इत्यर्थः ।

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR FEBRUARY, 1868.

The monthly general meeting of the Asiatic Society was held on Wednesday the 5th February, 1868 at 9 p. m.

The Hon'ble J. B. Phear, Vice-President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced—

From Dr. J. Fayrer; copy of a lecture by M. Garcin de Tassy; *Cours D'Hindoustani (Urdu et Hindi) à l'école impérial et Spécial des Langues Orientales Vivantes.*

From Col. J. T. Walker, Superintendent of the Great Trigonometrical Survey of India; five copies of Nautical Almanac Circular, No. 11, of the Path of the total phase of the Solar eclipse, August 17—18, 1868, between Aden and Torres Straits.

From H. A. Mangles, Esq., through A. Grote, Esq.; a fragment of a stone hatchet, (Neolithic type,) found six miles north of Mercara in Coorg, on the crest of a hill.

Mr. Blanford remarked that this was the first time (to his knowledge) that any specimen of the polished or Neolithic type of stone hatchet had been met with in Southern India. Numerous Celts of the same type had been found in Bundelkund by Mr. Lemesurier and Mr. Theobald, and a fine series of these specimens had been presented by the former gentleman to the Society's Museum and figured in the Society's Journal, Vol. XXXI. p. 327. Stone celts of the chipped or Palæolithic type, similar to those of the Amiens gravels, had been found by Messrs. Foote and King in the Carnatic, and in September last a number of specimens from other parts of India were exhibited at the meeting of the Society. But hatchets of the type now before the meeting had been found

hitherto only in Bundelkund. It was probably owing to want of proper search, that they had not previously been met with elsewhere; for there could be no question that the hills and plains of Southern India had been occupied by man in a very early stage of development, and, in addition to the chipped hatchets, kist-vaens, cromlechs, and stone rings, some of an early iron age, but some probably of earlier date, were common both in the hill regions and the plains of India. It was noteworthy that there is no trace of a bronze age in India; the iron age appears to have immediately succeeded that of stone; but the various antiquities have as yet hardly been correlated sufficiently, to enable us to distinguish one of the iron period from one of the stone age.

From H. Blochmann, Esq.; a copy of a treatise on the Rubái, entitled *Risalah i Taranah*.

From A. Grote, Esq.; copies of Proceedings and publications of the Scientific Society of Aligurh.

The Council reported that they have nominated the following gentlemen to serve in the several Committees in the ensuing year.

Finance.

Dr. S. B. Partridge.

A. Mackenzie, Esq.

Philology.

Major W. N. Lees.

A. Grote, Esq.

H. Blochmann, Esq.

The Rev. J. Long.

Moulavi Abdool Luteef Khan Bahadur.

E. C. Bayley, Esq.

Library.

A. Grote, Esq.

Major W. N. Lees.

Dr. T. Anderson.

H. B. Medlicott, Esq.

W. S. Atkinson, Esq.

Kumar Hurendrakrishna Bahadur.

H. Blochmann, Esq.

The Hon'ble J. B. Phear.

Natural History.

Dr. J. Fayrer.
Dr. T. Anderson.
Dr. S. B. Partridge.
V. Ball, Esq.
Dr. J. Ewart.
The Hon'ble J. P. Norman.
W. S. Atkinson, Esq.
H. B. Medlicott, Esq.
A. Grote, Esq.
Babu Debendra Mullick.

Meteorological and Physical Science.

Col. J. E. Gastrell.
Captain J. P. Basevi.
Dr. S. B. Partridge.
Lieut. Col. J. T. Walker.
D. Waldie, Esq.

Coin Committee.

Major W. N. Lees.
A. Grote, Esq.
Captain F. W. Sturbbbs.
E. C. Bayley, Esq.

Committee of Papers.

All the members of the Council.

Statistical Committee.

Dr. J. Ewart.
C. B. Garrett, Esq.
Lieut.-Col. J. T. Walker.
The Hon'ble J. B. Phear.

*Ethnological Committee.**Linguistic Section.*

Rájendralála Mitra, Esq.
The Hon'ble W. Markby.
H. Blochmann, Esq.
Major W. N. Lees.
J. Beames, Esq.
Dr. John Anderson.

Physical Section.

A. Grote, Esq.

Dr. S. B. Partridge.

Dr. J. Ewart.

Dr. J. Anderson, Secy.

The following gentlemen, proposed as ordinary members at the last meeting, were ballotted for and duly elected.

Major Edgar Clark.

John Kavenagh, Esq.

L. H. Lees, Esq. M. D.

G. Robb, Esq.

The Council recommended the following alterations in the Rules of the Society ; viz,—

That to rule 13,* the words “ nor shall his name be entered on the member roll” be inserted after the words “ entitled to vote.”

To rule 43 the following words be added, “ Six weeks from the date of issuing the voting papers, being allowed for that purpose.”

To rule 64, the following words to be added :—“ But no case which involves a change of the rules of the Society, shall be declared urgent under this rule.”

After some discussion it was proposed by Mr. J. Beames that the words “ two months” be substituted for “ six weeks” in rule 43.

Mr. Bourke seconded the amendment, which was put to the vote and carried by a large majority.

On the recommendation of the Council, the following gentlemen were ballotted for and elected Honorary members of the Society.

Dr. T. Thomson, F. R. S.

Genl. A. Cunningham.

Profr. Bapu Deva Sastri.

And the following gentlemen were balloted for and elected Corresponding members of the Society.

Profr. Holmboe of Christiania.

Mons: F. H. Foucaux, Professor of Sanskrit, College de France, Paris.

The Secretary then read the following note from F. S. Growse, Esq. on the village of Paindhat, in the district of Mainpuri.

* Not rule 43, as erroneously reported in the January Proceedings.

“ The village of Painḍhat in the Mustafabad Pargana of the Mainpuri district, is a Hindu *tirtha* of something more than local repute, since it attracts devotees at the yearly festival from places so far distant as Pilibhit and Kantipur. The principal shrine is of no great antiquity and possesses no architectural merit. The original building is said to have been erected in commemoration of the eponymous hero of the village, Painḍhat or Pánduvansi, who fell on that spot, fighting in behalf of Prithivi Ráj against Jaya Chand the king of Kanauj. In all probability some mention of this warrior and his exploits would be found in the poem of Chand Bardail ; but this is a work of which I have not yet succeeded in procuring a copy. No doubt the Asiatic Society includes many students of early Hindi literature, some one of whom will kindly oblige me with information on the subject.

On the other side of the village is another shrine, affected chiefly by Bhangis and Dhánuks, who, at the yearly festival, offer sacrifices of young pigs before the presiding deity, who is worshipped under the name of Jagaiya. The temple itself though a neat little building is quite modern. The sculpture, however, which it has been erected to preserve is of considerable interest and antiquity, being a fine large figure of Buddh seated on a singhásan with elephants and other carved accessories. This must at one time have adorned a Buddhist temple of considerable size and pretensions ; and therefore, if the tradition is correct, which derives the present name of the village from a hero in the time of Prithivi Ráj, it will be of much archæological interest to ascertain what is the name by which Chand calls it. Possibly an important historical site may thus be identified.

Considering the large amount of topographical information which it may reasonably be supposed lies embedded in the Prithivirájráś, I think a critical edition of the work, though it is in Hindi and not Sanskrit, would be an undertaking by no means derogatory from the dignity of the Asiatic Society.

Mainpuri, December 30th, 1867.

F. S. GROWSE.

Mr. Long observed that he had noticed, some time since, the existence of a copy of Chand's poems in St. John's College, Agra, to which it had been presented by the Jyepoor Rajah. He had proposed that it should be applied for, for examination by the Society ; and if thought desirable, published.

Mr. Beames said that if it were decided to publish the poems, he should be happy to undertake the editing of the work.

The Secretary read the following letter to the Principal of the Agra College, which had been written in consequence of Mr. Long's motion, together with the reply.

No. 60.

To the Principal of the Agra College, Agra.

Asiatic Society's Room, Calcutta, 28th January, 1867.

SIR,—The Rev. J Long having brought to the notice of the Asiatic Society that there is a MS. of the Poems of Chand in the Library of the Agra College, I am directed to request you will be good enough to allow the Council the loan of that work for a few days, in order that it may be examined, and an analysis of its contents prepared by the Philological Committee of the Society. Every care will be taken of the book while in the possession of the Society, and it will be returned to you by an early opportunity.

I have, &c. &c.

(Sd.) RAJENDRA LALA MITRA,
Secy. As. Society.

No. 318 of the 1867-68.

From the Principal, Government College, Agra.

To the Secretary, Asiatic Society, Philological Department, Calcutta.

SIR,—Your letter No. 60, dated 28th January last, to which you call attention in No. 20, of 22nd January, 1868, has never reached this office.

The Manuscript, which you wish to borrow, is so valuable a one, that without the authority of the Government N. W. P. I should not like to trust it to the railway for transmission.

I have, &c.

(Signed) H. DEIGHTON,
Principal, Government College.

Agra College, the 30th January, 1868.

Mr. Long then proposed that the Government N. W. P. be asked to appoint a scholar to give a full report upon the copy of Chand Bardi's poems in the Agra College, and to permit a copy to be made for the Society.

The proposition was seconded by Mr. E. C. Bayley and unanimously agreed to.

The following extract of a letter from W. T. Blanford, Esq. being Natural History Notes made on his voyage to Abyssinia then was read.

Mr. Blanford writes from Aden, on the 16th December—

“We came in here on Saturday night (14th) having come across from Bombay in 10 days and 9 hours, a very fair passage. We were going too fast at first for a towing net, and all I made, for some time, were carried away. At last I got one to work made of bunting, and when we were going 8 knots instead of nine or ten, I managed to make a fair haul. I got 3 species of *Janthina*; 2 of *Hyalæa*; *Styliola* of course, but not abundantly; one or two small specimens of *Glaucus*; a small *Atlanta*, and plenty of *Porpita* and *Vevello*. But the greatest catch was an extremely minute species of Forbes's genus *Cheletropis*, which is not a Pteropod, but I really don't know what it is. The species is almost as minute as *Opisthostoma*; so examining the animal with a lens was not easy; but it has some most curious ciliated mantel processes, the cilia being constantly in such rapid motion, that I thought at first these were rotifers adhering to the peristome.* I got two species of *Litiopa* and several *Crustacea*; crabs, *Stomapods* and *Copepods*; besides several small fish. The only bird was a night-jar, which got away again, and a peregrine falcon which settled in the rigging, and I bowled him over.

I have been climbing the hills this morning, (it is actually cool here!) and am astonished at the resemblance of the rocks to the Deccan traps; allowing of course for chemical changes, and the filling up of the vesicles (in the lavas). I am more than ever convinced that the Deccan traps are simply lava flows and ash beds. I have never had a turn at undoubted Volcanic rocks since I have been at work in Bombay.

I have found two land shells here. One is *Bulimus pullus*; the other, another *Bulimus* of the same section, very near *B. Indicus*.

A second letter dated 7th January, and written from Loullu says—

“I landed on the 24th. I have not been up to Senafé yet, but hope to go off in a day or two, * *. I have not been out much, except to

* The animal of this genus had been described by Mr. J. D. Macdonald; and shewn to belong to the *Heteropodous* family *Macgillioragula*. The name *Cheletropis* is also to be changed to the prior name *Simesigera* Dbl. See Appendix to Adams' "Genera of Recent shells." Vol. ii. p. 613.—Ed.

Hadooda and across the bay. Geology not very interesting. The camp is on the delta of the Hadass and stands a good chance of being swept away in the rains.

“I am getting a few skins, but only one of my collectors is here. I am obliged to take flat skins of the larger mammals chiefly, but I hope to have some fit for mounting. I must try to get a good pair of the Wast-hog (*Phacocheirus*) which, rather to my surprise, abounds here. I killed a fine fellow last Sunday, but it was too far off to carry him in, entire. I secured his head however. He showed no fight. There is a largish antelope about, rather larger than black buck, both sexes horned; a species of *Gazella* in the more extended meaning of the word. However, I must write to you about the fauna hereafter.”

The following correspondence with Colonel H. L. Thullier, regarding the errors of the observations recorded at the Government Observatory during the late cyclone was read.

No. 775.

To Col. H. L. THUILLIER, Surveyor General of India.

Asiatic Society, Rooms, Calcutta, 26th November, 1867.

SIR,—In accordance with a resolution of the Asiatic Society, adopted at the ordinary general meeting held on the 6th Nov., I have the honor to draw your attention to the grave discrepancy of the barometric and rain gauge observations for the night of the 1st and 2nd November, published by the officer in charge of your observatory, and those recorded and published by M. Lafont and others. These discrepancies are so great, as not to be explicable by any slight differences of the instruments employed; and that they are not so in the case of the barometric observations, is proved by the fact, that up to 0h. 20m. of the 2nd November, (at which time the 10 minute observations recorded at your observatory, suddenly ceased,) the pressure curve indicated by the observatory barometer and that of M. Lafont, coincide as closely as those of any two barometers, observed by different persons, at slightly different intervals, could be expected to do under any circumstances.

It is after 0h. 20m. that the great discrepancy above mentioned commences, and while the hourly observations of the observatory barometer indicate a lower minimum than in the cyclone of 1864, viz. 28.554, M. Lafont's observations shew a minimum of 28.686 only,

Hadooda and across the bay. Geology not very interesting. The camp is on the delta of the Hadass and stands a good chance of being swept away in the rains.

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and the barometer of the Durham, (as observed half an hour later,) one of 28·784 reduced. The curve of the Durham barometer and that of M. Lafont's coincide closely throughout, while that of the observatory ranges much below either up to 8 o'clock, when it rises suddenly to a higher point than either of the above.

This coincidence of two independent barometers leads the Society to think it probable that the observatory record has been vitiated by some unexplained error; an idea which is strengthened by the fact that all the barometric observations made in or near Calcutta, that have been published, shew a minimum range much less than that of the cyclone of 1864.

It cannot be doubted that the rainfall for the height of the 1st and 2nd is erroneously reported as 2·74 inches. No one who experienced the cyclone could reasonably suppose so small a fall, or could doubt that M. Lafont's register of 6·78 inches must be much nearer the truth. The Anemometer is stated to have been blown away before the wind reached its greatest violence, but the register of the rainfall is that indicated by the anemometer gauge. The question cannot fail to present itself to any reflective mind;—'Were the indications of the rain gauge in no degree vitiated by the destruction of a large part of the recording instrument?'

Finally, I am requested to solicit an investigation into the causes that led to the destruction of the anemometer, an accident greatly to be regretted, as in neither of the two violent cyclones which have visited Calcutta within last four years, has the maximum pressure of the wind been recorded, and a datum of very great importance both in its economic and scientific bearings has been irretrievably lost. The Society trust that if on investigation it be found that the cause of destruction has been due to any oversight in the erection of the instrument, the same may be carefully avoided in refixing it. But if inseparable from the principle of the anemometer employed, that a form may be selected capable of resisting and recording the pressure, even of a more violent cyclone than that now in question.

I have &c.,
(Signed) H. F. BLANFORD,
Secy. As. Soc. Bengal.

To the Secretary to the Asiatic Society of Bengal.

SIR,—In reply to your letter No. 775 dated the 26th ultimo, I have the honor to forward, for the information of the Asiatic Society, copies of letters from Babu Gopeenautha Sen, the Officiating Superintendent of the Observatory, as per margin, regarding the meteorological observations taken at this office on the night of the 1st and morning of the 2nd November, during the prevalence of the cyclone which passed over the metropolis.

No. 48, dated 12th instant.

No. 46, dated 3rd instant.

2. Nobody can regret more than I do, the semblance of imperfections in important observations of this nature at such a critical time. The Officiating Superintendent of the Observatory, Babu Gopeenautha Sen, is very positive as to the fact of the Barometric pressure having been observed hourly, from midnight of the 1st until daylight of the 2nd November. The ten minute observations which had been commenced at the first indications of the storm, were necessarily stopped after 0h. 20m. on the 2nd, but from all the evidence I can collect, I fear that, owing to the fury of the storm, and the absence of the officer in charge, who does not reside in the premises, and who failed to appreciate the importance of the occasion or to shew any zeal and energy in the cause, even the hourly observations cannot implicitly be relied on between the hours noted, on the morning in question; dependent as they are on the *ipse dixit* of a very subordinate native observer.

3. This may be partly attributed to the exposed position of our Meteorological shed, where the Barometer and Thermometers are fixed. I was not present at Calcutta myself, but the Deputy Surveyor General, who was then in charge of my office, considers that it was almost impracticable for a native observer to withstand the cyclone during those hours, or at all events to read off the observations with sufficient accuracy or confidence, to warrant the belief in their absolute correctness. Had the duties been under competent European supervision, I dare say the result would have been different. It is generally supposed that we have an "observatory" in Calcutta: this popular error has been of long standing. In point of fact, we have no observatory at all, but merely prosecute such observations at the Surveyor Gene-

ral's Office, in the best way possible with inadequate means; and it has long been a source of the greatest anxiety to me.

4. The circumstances under which the Anemometer was destroyed, can easily be explained to the Society, or to the Council on a personal visit to the observatory. It is not possible to convey an adequate idea on paper, but I may observe that in spite of several additional fastenings to the wind gauge subsequent to the former cyclone of 1864, the whole of it, together with the leaden roofing of the observatory, was blown clean away. Every precaution was taken, but with such cyclones of unprecedented violence nothing is safe. Different arrangements will now be tried and duplicate instruments put up.

5. The main object of these observations was however secured, and ample notice was furnished to the Master Attendant as well as to the Meteorological Reporter to the Government of Bengal, by the Officiating Superintendent of the Observatory; but on such important emergencies it appears to me very desirable that the Meteorological Reporter should have the means of watching the rise and depression of the mercurial column, and note the curve himself.

6. It is gratifying to observe the great interest taken by the meeting of the Asiatic Society in the Meteorological Observations, the results of which I have for so many years rendered to them for insertion in their journal. The state of these observations, and the agency necessary for the purpose, were prominently brought to the notice of the Government of India in 1864, to the effect quoted in the

* "That if it is intended to carry out the project for systematic Meteorological observations in the most complete and perfect way, it is necessary to appoint a officer of high scientific attainments for the general arrangements and supervision of the whole undertaking; the Meteorological observatory to be entirely detached from the Surveyor General's office and placed with the Superintendent of Meteorological observations"—

margin,* and remedial measures most urgently recommended, but I regret to say without effect. It is obvious that native superintendence alone, and so trifling a native establishment for carrying out hourly observations night and day, are totally inadequate for

scientific purposes, and the subject will again be urged on the consideration of Government, in the hope of some speedy change being made.

7. The subject of the observations recorded during the cyclone, having been entered into more in detail with Mr. Blanford the Meteo-

rological Reporter to the Government of Bengal, I have no doubt that gentleman, as he likewise fills the place of Secretary to the Society, will be able to furnish any further information which may be required.

I have &c.,
(Signed) H. L. THUILLIER,
Surveyor General of India.

Surveyor Genl.'s Office, Calcutta, 12th Dec., 1867.

No. 48.

From BABU GOPEENATHA SEN, in charge of the Observatory.

To COL. H. L. THUILLIER, Surveyor Genl. of India.

SIR,—With reference to your memo. No. 1642, dated 3rd instant, forwarding for explanation a letter from the Secretary to the Asiatic Society, No. 775, dated 26th ultimo, anent the subject of the Meteorological observations at this office, during the night of the cyclone of 1st and 2nd November, I beg leave to refer you to my letter of the 3rd December, No. 46, wherein, I believe, I have fully explained all the points mooted in paras. 1 to 4 of the Secretary's letter.

With regard to the 5th para. relating to the Anemometer of this office, I beg to state that shortly after the cyclone of 1864, the instrument was put up on the observatory roof with six supports instead of three as before, with a view that the current of wind may act freely on it. The fixing of the instrument was done under the direction of the Deputy Surveyor General, Col. Gastrell, and the Secretary to the Meteorological Committee, Mr. Blanford. [vide the Cyclone Report of 1864.]

The cause of the destruction of the Anemometer may be attributed to the leaden sheets on the observatory roof having rolled up and blown against the supports of the said instrument. I need hardly state that at the time of putting these sheets up, every precaution was taken by the builders, Messrs. Mackintosh, Burn & Co., to prevent their giving way to the force of a storm or gale.

I would venture to suggest, that with a view to guard against

similar injury being done to the Anemometer in future, it may be placed (after repairs) on the roof of the stair case, which is *pucca*.

I have, &c.

GOPEENATHA SEN,

In charge of the Observatory.

Surveyor General's Office, Calcutta, 3rd December, 1867.

No. 46.

From Babu GOPEENATHA SEN, in charge of the Observatory.

To Col. H. L. THUILLIER, Surveyor General of India.

SIR,—With reference to your official memo. dated 26th November, 1867, calling upon me to explain certain anomalies, alleged by Mr. Blanford, the Meteorological Reporter, in his letter to your address, No. 280, dated 25th idem, to have occurred in the Barometric and rainfall records of the observatory of this office of the morning of the 2nd November last, I have the honor to submit the following remarks for your consideration.

2. Mr. Blanford states that the ten minute observations after 0 h. 20 m. on the 2nd November, ceased at this office, while those of M. Lafont were continued throughout the height of the storm at comparatively short intervals. The fact is, that the Barometer in our office is placed in an open shed for the purpose of admitting free action of wind. The observer on duty was exposed to the full brunt of the storm and rain, and it is not to be wondered at, that after a continued struggle till midnight, amid the furious strife of the elements, to do his work, he failed thereafter to take ten minutes' observations, though he did not omit to note the hourly observation. I suppose M. Lafont was not exposed to these serious drawbacks in taking his observations.

3. With regard to the difference in the readings of the three Barometers, I beg to observe that our Barometer being a standard one and consequently more sensitive than ordinary barometers, (as admitted by Mr. Blanford in his report on the cyclone of October 1864) the difference pointed out by him, in his letter under notice, may well be accounted for, partly by the difference of the instruments and partly by the irregular oscillations of the mercury during a storm.

In advertence to the discrepancy pointed out between my statement

of observations and that obtained by Mr Ormsby, late Meteorological Reporter, from this office, I beg to observe that neither myself nor my assistants are responsible for his returns. He himself made a copy, and it would appear, took wrongly the three observations given below.

Mr. Ormsby's statement,		Office statement.
	Inches	Inches.
Midnight,	29·052	29·062
3 A. M.	28·600	28·660
7 A. M.	29·788	29·778

As regards the statement of rain fall, Mr. Blanford, I respectfully submit, evidently labours under a misconception of facts. It is true that I had told him that the lower rain gauge at our office was not reported on the night of the storm, inasmuch as "one had been blown over and the other had overflowed." The last statement should be received with some qualifications. I don't remember whether I used the word "overflowed," when I spoke to Mr. Blanford on the subject, but what I meant to say was this, that one of the gauges had collected in the funnel of the receiver a large quantity of rain, which had overtopped it: the bore of the funnel being closed by earthy matter, did not allow the water to go in to the receiver. My record of the rainfall had, however, been taken from the indications of the gauge attached to the Anemometer at this office. It had neither been blown down nor had it overflowed. Mr. Blanford lays great stress on the circumstance that in the weekly Register Table furnished by this office to the Meteorological Reporter, the rainfall between 22 hours on the 1st and 4 A. M. on the 2nd was given at 0·67 inch and that from 4 to 10 A. M. at 2·74 inches.

This apparent confusion is the natural result of the form of the Table prescribed by the Meteorological Reporter and not of an inaccurate observation as imputed. Properly speaking, the fall of 0·67 inch should have been quoted at 23 h. of the 1st November; but as there was no column for 23 h. in the weekly register table, it was necessarily inserted at the next available hour viz. 4 A. M. of the 2nd November, in the said table. There was no mistake in the original record, but the observations taken at 23 h. on the 1st November was entered in the column for 4 A. M. of the 2nd in the

weekly register table, which Mr. Blanford erroneously supposes represented the total rainfall according to the report of this office for the whole period of the cyclone. Further, the quantity of rain from midnight to 4 A. M. of the 2nd November, was 2·74 inches and from 5 to 10 A. M. it was drizzling. This quantity was only inserted in the Register table of the office at 10 A. M. of the 2nd November. It would be thus seen that from 5 P. M. of the 1st to 10 A. M. of the 2nd November, the actual rainfall was 3·41 inches. Mr. Blanford states that the rainfall given by M. Lafont for the 24 hours from 7 A. M. of the 1st November to 7 A. M. of the 2nd idem was 6·87 inches; whereas the rain recorded in the observatory for the same period amounts to 3·86 inches. This disparity between the two statements may, in my humble opinion, be accounted for by the height and local position of the two rain gauges under comparison. I may observe that in a storm, it is by no means improbable that the receiver of the observatory rain gauge being on the top of a high building, collects less than the actual rainfall. A greater portion of the rain being carried off by the force of the hurricane horizontally across the mouth of the instrument; whereas a rain gauge fixed on the ground and surrounded by buildings is likely to shew a much larger quantity.

I have given above a bare statement of facts. My position, I humbly conceive, does not permit me to comment on the reflections which Mr. Blanford, without due enquiry, has thought fit to make on the observations which I have the honor to take in this office, indirectly hinting, for reasons which I hope I have shewn to your satisfaction to be wholly groundless, that they are inaccurate and therefore unreliable.

I have, &c.

(Signed) GOPEENATHA SEN,

In charge of the Observatory.

Mr. Blanford said that a few remarks from him would be necessary to explain certain portions of the correspondence just read. With regard to the destruction of the anemometer, he could endorse Colonel Thuillier's assurance that every precaution was taken to fix the vane-rod firmly; and so firmly had it been fixed, that some of the stays retained their place, the sheet lead which had covered the roof having lapped over the vane, and by sheer force torn the collar of the rod from

the bolts that fastened it to the stays. The destruction of the instrument was due to the mode in which the sheet lead had been fastened. The edges had been turned over the cornice of the roof and nailed underneath, instead of being bolted right through, with iron bars above and below the only fastening calculated to withstand a cyclone. No doubt the builders had not contemplated the occurrence of a cyclone, and the sheeting would have held fast in an ordinary storm; but when the wind had once made its way underneath the edges, nothing could preserve it from being torn away.

The notice of the approaching cyclone which is stated to have been furnished to the Meteorological Reporter had never reached him, as he had already explained officially. This was due to his having returned from England only two days before, and having assumed charge of his office only on the day before the cyclone, so that the notice referred to had been sent to Mr. Ormsby, who had officiated during his absence, instead of to himself. The non-receipt of this notice, which he understood to be the report of the barometric reading for 10 h. of the 1st, had not however delayed his action. The Saugor Island and Cuttack reports were of more importance in such cases than those of Calcutta, but he had not felt justified in giving a general warning to the shipping even on the receipt of the Saugor 10 h. report. This had indeed prompted a telegraphic application for a further report, and on the receipt of the reply, the warning was communicated to the Master Attendant, before 3 o'clock of the afternoon of the 1st. The letter addressed to him as Meteorological Reporter had been written in reply to one which he had officially addressed to Colonel Thuillier in the same capacity, and in which he had entered in greater detail on the subject of the discrepant observations. It would hardly be necessary to discuss these details at length before the Society, as the resolution which had originated the correspondence had dealt with the main facts of the case.

The receipt of the following communication was announced.

From Capt. H. H. G. Austen; Notes to accompany a Zoological Map of a portion of the Khasi Hills, near Longitude 91° E.

Mr. Bayley announced that Col. Tennant is coming from England fully equipped with instruments in order to observe the eclipse of the sun which will occur on the 17th August, and will be total at Musulitam, at which station Col. Tennant proposes to establish his observatory.

LIBRARY.

The following additions were made to the Library since the last meeting in January.

••• The names of Donors in capitals.

Presentations.

Selections from the Records of the Government of India, No. 54. Home Department.—THE GOVERNMENT OF BENGAL.

Dattaka S'iromani.—G. M. TAGORE, Esq.

An old Zend-Pahlavi Glossary by Dr. M. Haug.—THE GOVERNMENT OF INDIA.

An uniform Metrology for India by C. F. Gower, F. S. A., F. G. S.—THE REV. C. H. DALL

Cœurs d'Hindustani (Urdu et Hindi) A. l'École Impériale et Spéciale des Langues Orientales vivantes Discours d'Overture du 2nd Décembre, 1867.—THE AUTHOR.

An Elementary Grammar of the Coorg Language.—THE GOVERNMENT OF BENGAL.

The Indigenous Drugs of India, by Kánáyálála De.—THE AUTHOR.

Chaturdas'apadī Kavitámála, part I. by Rámadása Sena.—THE AUTHOR.

An enumeration of the Indian Species of Acanthaceæ by T. Anderson, M. D., F. L. S.—THE AUTHOR.

The Persian Metres by Saifi, and a treatise on Persian Rhyme by Jámi. Edited by H. Blochmann, M. A.—THE EDITOR.

Über einige Fische aus dem Fitzroy Flusse bei Rockhampton in Ost-Australien von Dr. F. Steindachner.—THE AUTHOR.

Ichthyologische Mittheilungen (IX.) Über einige neue Süßwasserfische von Angola, von Dr. F. Steindachner.—THE AUTHOR.

A few words about two Andamanese lads ; by Capt. T. C. Anderson.—THE AUTHOR.

Last words of a few celebrities.—CAPT. T. C. ANDERSON.

A treatise on the Rubái entitled Risalah i Taranah by Agha Ahmad Ali.—H. BLOCHMANN, Esq.

Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859, unter den Befehlen des Commodore B. von Wüllerstorff Urbair. Zoologischer Theil. Reptilien.—THE AUTHOR.

The Textile manufactures and the costumes of the People of India ;
by J. Watson, M. A., M. D., F. R. A. S.—THE GOVERNMENT OF INDIA.

Nautical Almanac Circular No. II. on the phase of a total sun
eclipse of August 17-18, 1868.—COL. J. T. WALKER.

Storm warnings, their importance and practicability ; by Col. Sykes.
—THE AUTHOR.

Correspondence regarding the Comparative Merits of British and
Native Administration in India.—THE GOVERNMENT OF INDIA.

The Fishes of Zanzibar.—THE GOVERNMENT OF INDIA.

Report on the Vegetation of the Andaman Islands.—DR. T. ANDERSON.

Results of a Tour in Dardistan, Vol. I. Pt. I. by Dr. Leitner.—
THE AUTHOR.

Report on Civil Dispensaries of the Madras Presidency for 1866
—THE GOVERNMENT OF MADRAS.

Report on Public Instruction in the Madras Presidency.—THE GO-
VERNMENT OF INDIA.

Bulletin de la Société de Géographie, Oct. and Nov. 1867.—
THE GEOGRAPHICAL SOCIETY OF PARIS.

Philosophical Transactions ; Vol. 156, Part II.—THE ROYAL SOCIETY
OF LONDON.

The Annals of Indian Administration in the year 1865-66.—THE
GOVERNMENT OF INDIA.

The Journal of the Linnean Society, Vol. 9, Nos. 34, 35, 38, and
39.—THE LINNEAN SOCIETY OF LONDON.

Transactions of the Zoological Society of London, Vol. 6.—THE
ZOOLOGICAL SOCIETY OF LONDON.

Selections from the Records of the Government of India, No. 54.—
THE GOVERNMENT OF INDIA.

Journal Asiatique, No. 35.—THE ASIATIC SOCIETY OF PARIS.

Purchased.

Thesaurus Craniorum. By Dr. J. B. Davis.

Hewitson's Exotic Butterflies, Part 64.

The Ruins of Mandoo ; by Capt. C. Harris.

Carus and Englemann's Bibliotheca Zoologica, Vol. II.

The Kamil, part IV. by W. Wright.

Works of H. H. Wilson : Vol. 8, Vishnu Puráná, Vol. 3.

- Birmah, its People and Natural productions, by the Rev. F. Mason.
The Ferns of British India, parts 16, 17, by Capt. Beddome.
Reeve's Conchologia Iconica, parts 266, 267.
Roth and Böhrtlingk's Sanscrit Wörterbuch; Lief, 3-5.
Gunter's Zoological Record, Vol. III.
The Mammals of India; by Surgeon Major T. C. Jerdon.
Padārtha Tattvasāra; by Pandita Jayanārāyana Tarkapanchānana.
Reise der Oesterreichischen Fregatte Navara um die Erde, in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff Urbair. Zoologische Theil; Lepidopteren.
The Indian Medical Gazette, Vol. II, No. 12, 1867.
The Quarterly Journal of Science, No. 16, October, 1867.
Comptes Rendus, Nos. 13—20.
Calcutta Review, No. 91.
Revue et magasin de Zoologie; October, 1867.
The Annals and Magazine of Natural History, Nov., 1867.
Revue des Deux Mondes, for Sept. and Oct. 1867.
Journal des Savants, Nov., 1867.
The Indian Annals of Medical Science, No. 23.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR MARCH, 1868.

A Monthly General Meeting of the Society was held on Wednesday, the 4th Instant, at 9 P. M.

E. C. Bayley, Esq., in the chair.

The proceedings of the last meeting were read and confirmed.

The receipt of the following presentations was announced.

1. From W. Rutledge, Esq., Two Specimens of *Llama glauca*.
2. From Bábu Harachandra Chaturdhúrina, Zemindar of Mymensing; A stone slab bearing an Arabic inscription, found in his zemindary, Sherepore.

3. From Bábu Gauricharana Ráya. A specimen of *Strix Indica*.

4. From the Rev. F. F. Mazuchelli. An iron human cage.

The following letter from Mr. Mazuchelli, describes this donation.

MY DEAR GROTE,—I write to enquire whether the Asiatic Society would care to possess an old relic, in the shape of a human iron cage, discovered by me under a tree, at Furreedpore, and taken away with the permission of the Magistrate of that place. The cage is in a good state of preservation, but it has lost one arm. I have gathered all the information I could respecting the same, viz,—one authority tells me that dacoits, when caught, years ago, (say some 60 or 70 since,) between Dacca and Calcutta, were put alive in this cage and exposed to the air to die of hunger, as a lesson to others. Another authority tells me that the culprit was hung first and then put into the cage, and the cage hung up to a tree to deter others. But what seems to me the most probable story is, that under the Nizámat (the criminal

government) of the Nawáb Názir of Murshidábád in the last century, and even afterwards, under the English rule, it was the custom to hang persons, convicted of murder, at the Sudder or chief station of the district, and after decease, to remove the body in a cage to the native village of the deceased, and there suspend it on a gibbet as a warning to others. Now the cage I have now in my possession and which I willingly offer to the Society, is that in which, according to report of the people of Whau-Wharazpore, Thana Bêtká, the corpse of one Goriah Moochee was placed after execution for a murder of which he had been convicted.

This was when the station of Furreedpore was first established in 1809, and it would seem to be the only known instance of the kind in that district. A Mr. J. H. Ravenshaw found the cage at the above mentioned village in 1857, and had it brought to Furreedpore, where I found it. The natives had it in such horror, that they would go a good round to avoid it. One arm, as I have stated, is lost, and this occurred, when, as a joke it was sent by some one to the late Dacca Exhibition and sent back by its Committee with scorn. This is all I could gather respecting this wonderful relic. Let me know if it is accepted, and I shall then send it by the next steamer. * *

* * *

Yours most heartily,

F. F. MAZUCHELLI.

5. From Bábu Pránanátha Datta, a copy of Sanjûktá-Svayambará-nátaka.

6. From V. Ball, Esq., a specimen of *Ciconia alba*.

The following gentlemen are candidates for ballot at the April meeting, as ordinary members.

H. S. H. Prince Frederic of Schleswig-Holstein; proposed by Major Lees, seconded by Mr. Grote.

Cumára Pramathanátha Ráya, Zemindar of Digápati, proposed by Babu Rájendralála Mitra, seconded by Mr. Grote.

Babu Bholánátha Chandra, proposed by Babu Rájendralála Mitra, seconded by Mr. Grote.

William McLaren Smith, Esq., Bengal Educational Service, proposed by Mr. J. M. Scott, seconded by Dr. Colles.

The following gentlemen have intimated their desire to withdraw from the Society.

E. T. Trevor, Esq.

J. Christian, Esq.

The Council reported that they have adopted the following resolution of the Finance Committee.

“Resolved that the following members, in arrears with their subscriptions, having received notices in accordance with the provisions of Bye Law 11, and not having paid within the time allowed, are to have their names struck off the list of members, as provided by the Rule.

The Hon. R. S. Ellis, M. C. S., Madras.

Mahárájá Satis'chandra Ráya Bahadur of Krishnagore.

W. H. Scott, Esq., Dehra Doon.

“And that they have adopted the following recommendations of the Finance Committee.

“That it be recommended to the Council that the following gentleman's name be struck off the member list, he never having paid his admission fees, and being thus non-amenable to the privileges of membership, and to the provisions of Bye Law 11.

Moonshee Sudderudin, elected November, 1861.

“That the collecting sircars' pay, now Rs. 9 and 10, be altered to Rs. 8 and 9 respectively, and a commission on subscriptions and small bills (not including Government bills) be allowed as follows;—

“If collected within the quarter in which the payment is due, 1 per cent.

“If in the next quarter following, $\frac{1}{2}$ per cent.

“Afterwards, $\frac{1}{4}$ per cent.”

The Council also reported that they have resolved that scientific publications be left upon the table for a fortnight after their receipt, but that oriental publications be allowed to circulate at once, with the restrictions proposed by the Library Committee.

The council recommended that the special thanks of the Society be voted to Mademoiselle Clarisse Bader for a copy of her work, “*La Femme dans l'Inde Antique*” forwarded by her through M. Garcin de Tassy, to Messrs. Williams and Norgate, for the Society.

The Secretary read the following letter from Mademoiselle Bader, addressed to M. Garcin de Tassy, with the work.

“ A Monsieur Garcin de Tassy, Membre de l’Institut.

“ *Monsieur et illustre Maître.*

“ J’ai eu l’honneur de vous dire que la lecture du beau discours que vous aviez prononcé, le 2 Décembre dernier, avait éveillé en moi le désir d’envoyer à Calcutta, mon premier essai, déjà agréé par Sa Majesté la Reine d’Angleterre.

En considérant sur vos traces, les progrès que fait aux bords du Gange, la régénération morale de mon sexe, je devais naturellement penser à diriger vers cette région, *La femme dans l’Inde antique*, ce livre que j’ai écrit pour contribuer, non-seulement à vulgariser en France la littérature Sanscrite, mais encore à découvrir dans l’Inde antique les germes de civilisation que l’Evangile est appelé à féconder dans l’Inde moderne.

Avec cette gracieuse bienveillance qui vous caractérise, Monsieur, vous m’avez proposé de faire agréer mon premier travail à la Société Asiatique de Calcutta. Je ne pourrais mieux offrir cette modeste étude qu’à la savante Compagnie qui a si bien compris que la Christianisme ne remplirait dans l’Inde sa mission de salut, qu’en s’appropriant les éléments presque évangéliques que renferment les anciennes traditions Sanscrites.

Déjà, en 1864, j’ai pu rendre un hommage public à cette Compagnie, en lui consacrant, dans *l’Annuaire des sociétés savantes*, une notice que m’avait demandée M. le Comte Servins d’Héricourt, l’auteur de cette publication, et l’un de nos meilleurs amis. (1^{re} édition, Tome II, p. 498 à 461).

C’est donc avec une vive reconnaissance que je remets entre vos mains le livre qui, muni d’un passeport délivré par le plus savant indianiste de mon pays, parviendra à sa haute destination.

Veuillez agréer, Monsieur, l’expression de mes sentiments les plus respectueux.

CLARISSE BADER.

Chez son père, officier principal du service de l’Intendance militaire en retraite, officier de l’Ordre Impèrial de la Légion d’honneur.

62, rue de Babylone, à Paris.

The Secretary then read a letter from the Under-Secretary to the

Government of India, informing the President of the despatch of a copy of "A memorandum descriptive of the various tribes of Mysore" by Major Puckle.

Also the following extracts from a letter from Mr. W. T. Blanford, on the Zoology &c. of Abyssinia.

Mr. W. T. Blanford writes from Zoulla, Annesley Bay, on the 29th January.—

"My last letter to you was written, I think, on the 7th or 8th. The chief ordered me off to Undul or Mayen to look up the water supply; so I started on the 10th. I marched by the regular marches; Koomeylee the first day, 13 miles from this, across the plain, which is sandy, with a peculiar ever-green bush for about 3 or 4 miles, and then stony, over beds of coarse gravel washed from the hills by torrents, till close to Koomeylee. Almost the only tree is a very thorny *Acacia*, certainly distinct from the 'Babul' of India, and very flat on the top, almost mushroom shaped. Besides the long white thorns of the dwarf *Acacia* of India, it has recurved hooks along the branches.

"At Koomeylee the hills begin; all of gneissose and schistose rocks, with a steady north and south strike, dipping at low angles to the east. They roll over to the east, and 10 miles up the pass have higher dips; and thence continue steadily dipping to west or nearly so at angles above 60° up to near Senaffe. There is a very large supply of water at Koomeylee, which, the engineer officer there thinks, is due to a stream running beneath the gravel of the valley forming the pass; but this can scarcely be, for the temperature of the water is over 90° , and a stream could not, at this time of the year especially, be hotter than the annual mean temperature, which can scarcely exceed 85° at the outside.

"The second march is up the valley of the Koomeylee stream to Upper Sooroo. Ten miles from Koomeylee, the valley narrows to a high gorge, with precipitous rocks and running water. This, of course, looks as if water ran beneath the sand under the whole valley; and it probably does so to some extent. The scenery in the Sooroo gorge is very fine. All the hills are covered with very thin scattered scrub, chiefly *Acacia*. In the valley are small patches of jungle, increasing in number above.

“ From Sooroo, the next march, fourteen miles, is to Mayen, also called Undúl. Here a well has been dug, and there is now a large supply of water. I tested it just before leaving, and it gave 700 gallons per hour. A little above, at a place where three or four streams meet, is a plain about a quarter of a mile broad, covered with jungle, and it is this plain, formed of gravel, which, I think, supplies the water at Mayen, where rock nearly crosses the valley. All the route from Koomeylee to near Senaffè, is one valley, with a most gradual ascent, and a very good road is now nearly finished throughout, so that carts can go. Unfortunately the first heavy rain will cause a flood in the stream, and half the road will vanish.

“ I stayed at Mayen eight days, running out for two nights to Undúl up a side valley to the west, about ten miles from the main pass, where there was water and a Shoho village. From the plain already mentioned, there are seen, to the westward up the Undúl ravine, high mountains capped with white sandstone and having a flat top. They are part of the Tekoonda plateau. Sandstone, resting on Metamorphics, forms the whole plateau from Tekoonda to Senaffè. I climbed up to the sandstone but could not quite reach the top. However I obtained the first land shells I have seen; a *Helix*, a *Vitrina*, one large *Bulimus*, and another, a small pupiform species. When I came back, I found one of my horses sick with the disease that has killed so many of the horses and mules. I gave him up at once; however, despite every body's prediction, he pulled through. I then ran up for a day to Senaffè, two marches farther: the first to Rereguddy, where there is running water; thence to Senaffè. To Rereguddy the pass is the same as below; a gradual ascent between almost barren hills; but beyond, the hills are green and covered with bushes. About five miles from Rereguddy, the road ascends by zigzags to the plateau: this last, the only steep ascent on the road, not exceeding 800 to 1,000 feet. Senaffè is about 7,500 feet. On this ascent a kind of fir is abundant. It is a stunted tree like a young cedar.

“ I returned from Senaffè to Mayen the next day, and after waiting there a day, returned to Zoulla. Here I found the camp still very large. The railway is progressing, and the train now runs four miles,

and is expected to be through to Koomeylee in six weeks. Stores are coming in and are now procurable in considerable quantities. Sheds are rapidly being erected. The bushes around are fast disappearing for fire-wood. The water is scarcer than before and slightly brackish. Dr. Cook, the Meteorologist has arrived, and I think we may probably go on together. Everything, however, depends on transport.

“The fauna here is rather poor. The man whom I left behind to collect, had only eighteen or twenty species of birds when I returned, and almost all of them I had before. The only very common birds are three species of Wagtail, a *Motacilla* which I cannot distinguish from *M. Dekhinensis (vera)*, Sykes, and two *Budytes*, four larks, (1) a true skylark, (2) the little *Calendrella brachydactyla* so common in open places in India, or a very nearly allied form, (3) a *Phyrrhulauda*, the male handsomer than the Indian species, with all the lower parts black and (4) a fine desert lark *Certhilauda*. Two *Saxicolæ* abound, and a *Drymoica* is common in the bushes. *Cercomela melanura* is scarce here, but abounds in the passes.

“The game birds are a guinea fowl (*Numidia*) with blue wattles and a horny casque,—a fine partridge, with much naked skin of a bright orange and yellow colour on the head and forepart of the neck; one species of bustard at least; and a sand-grouse closely allied to the Indian *Pterocles fasciatus*. It may be *Pterocles quadrinctus*, Temm. which Jerdon mentions. There are a few shore waders; a pelican, of which I have not a specimen yet, and some gulls; a white necked crow and a few rapacious birds almost complete the Zoulla avi-fauna.

“The mammals are two species of *Gazella*; one typical, always solitary or in pairs, and closely allied to the Indian Chinkara; the other, a much larger animal which goes in large herds, and is about the size of the Indian antelope, but higher on the legs. A wart-hog (*Phacocheirus*) is common. The jackal is quite different from that of India: it is a slighter built animal with longer legs and ears. The hair is also peculiar. There is a fox, but I have not seen him. One species of *Hyrax* inhabits the shores of the bay. Another, and much larger form inhabits the passes.

“ On the hills, the fauna is much larger and more varied. One of the most interesting animals is a peculiar rodent which inhabits the rocks, and which is very probably Blyth's *Pectinator Spekei*, or possibly a second species of *Pectinator*. It has a short bushy tail carried like a squirrel's ; so much so, that I took the first specimen I saw for a squirrel which had lost half his tail. The skin is the most tender of any mammal I ever attempted to preserve. It is very common in the pass. Then there is a ground squirrel *Xerus*, a new species I think ; at least it does not correspond exactly with *X. rutilans*. and Ruppel and Gray, in the list lately published in the Annals and Magazine of Natural History, mention no other allied to it. There is a very handsome canine animal, of which I have only seen one imperfect skin, brown with the back grizzled black. There are one or two large antelopes ; one of them a ‘*Koodoo*’ (*Tragelephas* or *Strepsiceros*) different, I believe, from the S. African species. A distinct species of hare from that found here, is also said to occur.

“ The chief changes in ascending occur about 2,000 feet to 3,000 feet. There are not so many gradations in the fauna and flora as in ascending the Himalayas and Nilgiris ; at least, I think not. Many birds and plants of the plains, or rather of the base of the hills, are found up to 3,000 and 4,000 feet.”

The receipt of the following communication was announced.

Statistical data on the area of Asiatic Russia ; by M. M. Vranikof, translated by R. Mitchell, Esq., F. R. G. S., communicated by Colonel T. Walker.

The Secretary then read the following papers :—

MR. CARNEGIE'S QUERIES REGARDING RACES OF INDIA.

1. In my settlement enquiries I pay a good deal of attention to ascertaining the past history of the different clans and races ; and I now propose to ask your kind assistance, to get cleared up for me, by some of your enlightened coadjutors, a small matter that has disturbed my mind not a little.

The whole subject may be got into the short and rather uninviting sentence, “ What is Caste ?”

You are well aware that this place is the former capital of the long race of Solar Kings which began with Iksháku, which included in its number, Dasaratha, Raghu, and Rámachandra, and which ended with the expulsion of the last of them, Raja Dirigbow, who fled to the south, probably about the time that Rájá Nanda or his son Chandra Gupta of the Sudra caste, who lived in the days of Alexander the Great, overwhelmed and suppressed the Rajputs.

According to Hindu annalists, the Rajputs were altogether annihilated in the interests of Bráhmaṇa, by Parasuráma; and, after several generations, they were recreated on Mount Aboo, in view to their fighting the battles of Bráhmaṇas against the Budhists. Be that as it may, there is no doubt that the Rajputs gained head again in these parts contemporaneously with the Mahommedan conquest, and have since well maintained their influence.

It is said that, driven from all the great centres of Rájput power and Hindu devotion by the Mahommedan conquerors, the Kshatriyas took refuge in flight; and betook themselves, amongst other places, to Ayodhyá, their old seat of empire, whence the Bhars had driven them, creating colonies wherever they went.

Now, my own theory is that the Rajputs were neither exterminated nor wholly driven hence; that the more respectable and influential clansmen may have fled before the then dominant Sudra rulers; but that the mass of the Kshatriyas remained and were, in fact, no other than the Bhars; and that the final overthrow of these degraded Bhars, after the fall of Delhi, was neither more nor less than the restoration of Rájput influence in these parts, and the social reclamation of the so-called Bhars.

The weight of opinion seems to be in favour of the argument that the Bhars were an aboriginal people. Mr. Thomason says that the inhabitants of these parts in Ráma's time are known to us by the name of Raibhars. Sir Henry Elliot pronounces them to be "one of the aboriginal races of India," and he traces affinity between them and Churus, Bhiyas, Blutias, and perhaps Bhils and Ahirs.

Elphinstone hazards the observation that such aboriginal races as these just named, were probably the monkeys that formed the mythical army of Ráma. Lastly, one of the most intelligent natives of my

acquaintance, a Bráhmāna, steadily affirms that the Bhars were, in fact, Rajputs.

From all this, I think an inference may be fairly drawn that the Bhars are the aborigines of Eastern Oudh ; that they were Rajputs in Rāma's time ; that when they lost their king, they became degraded ; but that after the Mahommedan conquest, when the purer Rájputs who had fled to the west and who had, up to that time, maintained their superiority, were again driven eastwards to Oudh, they gradually mixed with the Bhars or degraded Rajputs who never left their homes ; probably intermarried with them by degrees, raised them in the social scale, and finally absorbed them altogether ; that, in fact, the suppression of *Bhardom* was, as I have already said, a social reformation much more than it was a Military achievement !

"It is always thus," remarks Sir E. Tennant, in his "*Ceylon*," "the fate of the aborigines (viz. absorption into the dominant race) was that usually consequent on the subjugation of an inferior race by one more highly civilized."

If the Ceylon Budhists, descended from a North West Bráhmāna, could, in time, absorb the aboriginal worshippers of snakes and demons in that island, as they are said to have done, then there is no reason why the Rájputs, returning from the west, may not have, by slow degrees, absorbed the aboriginal Bhars or quasi-Rajputs of Eastern Oudh.

Buchanan says that the Bais Rájputs are descended from Chirus, and these, it has already been said, were akin to Bhars.

The chief of Singrowlee in the Mirzapoor district, according to Sir Henry Elliot, is also a Chirus, although he calls himself a Benbuns.

In Tod's Rajasthan it is admitted that the Rajputs have intermarried with the degraded but aboriginal tribes and have become a distinct race. In describing themselves, they are said to unite the tribes of their father and mother, and of this I will now quote instances within my own knowledge.

First. Khunoma Rawat began life, in the Lucknow district, as a village watchman of the degraded Pasi caste. His second son was named Bakhta, who had a son, Visvarāma, whose son was the once no-

torious Gangá Buksh. This Gangá Buksh, in the words of Sleeman, "became enlisted into the tribe of Rájputs, and his sister was married to the Powar (Rájput) Rájá of Etonda. Rájá Yodha Sing, is her son. Sahnj Rám of Pokhura, pergunnah Hydergurh, of the Ameth-na tribe of Rájputs, married a daughter of Gangá Buksh."

The transformation, in this instance, from a low caste village watchman, to a high caste Rajput noble, occupied no more than four generations !

Second. The *Raotars* of this district are avowedly Rájputs sprung from a Bráhmána father and Ahir mother (and I have said that Sir H. Elliot thought Ahirs akin to Bhars.) The daughters of these Raotars marry into the best Rájput families in the land.

Third. One of the original Pulwar (Rájput) colouizers of this and the Azimgurh district, besides having a wife of his own class from whom the talookdars of Birhur are descended, took also an Ahirin, a Bharin, and a Daivi (demon) to wife, and the progeny of these women are now Rájputs. The talookdars of Tigra and Morerah of this district are of the number of their descendants. Further details of this family will be found in the Surhampur Report, but I may mention that the Ráj Kumár Thákurs, who consider themselves to be Chowhans of Mynpoorie, the cream of Rájputs, and a most exclusive clan, do not scruple to marry their daughters to the descendants of the low caste Daive !

These latter transformations, however, took more generations to bring about, than did the first given above.

These are notable instances of the descendants of people of low caste being raised in the social scale, and I therefore do not see why it may not fairly be assumed, that most of our Rajputs of these days have resulted from the general amalgamation of the Bhar and Kshatriya races, if, indeed, they were not originally one and the same.

There is one more point I would mention. Raja Bucktawur Sing told Sleeman that the having to take low caste wives was one of the punishments inflicted on Rájputs for killing their daughters. In connexion with this subject, I would state that a wholesale system was brought to light in this district only last year, while I was in charge, of Bráhmanas and Kshatriyas of apparent respectability trafficking in low caste girls just as they do in bullocks, procuring them as

best they could and selling them under false pretences, knowing them to be of low caste, to other Bráhmanas and Kshatryas who were often relatives of their own, in view to marriage. The offspring of these marriages would of course pass as pure ; and yet it was popularly known that the parentage of the thus-obtained mothers was enveloped in obscurity if not something worse.

We have then, on the one hand, the ancient chiefs of the land marrying into families of known impurity of origin, and we have, on the other hand, the clansmen buying their wives, of whose origin they know absolutely nothing ; and the more I think over these things, the more does the question with which I began this letter press itself on my astonished vision, viz. " What is Caste ? "

Any light that can be thrown upon the above interesting subject by yourself, or any other enlightened member of the Society, will be thankfully received by

P. CARNEGIE.

The Secretary also read the following from Lieut. SALE.

Near Bèr sip or Khabúr village on the road from Laiping to Assaloo, north Cachar, about six miles from Saiping, in a rice field, there are found a considerable number of hollow, irregularly shaped spheres formed of grey sandstone. These spheres are more finished in the upper than in the lower hemispheres and are roughly hollowed out ; the aperture being always uppermost and varying with the size of the vessel.

The vessels themselves vary from 5 to 2 feet in horizontal diameter, (the shape being that of a flattened sphere) and are extremely massive : the sandstone, out of which they are hewn, is covered with a number of small holes or depressions as if the vessels had been exposed to the attacks of some rock-boring insect.

The natives of Bèrsip village say that large numbers of these vessels are scattered over the hills between N. lat. $25^{\circ} 15'$ — $25^{\circ} 30'$ and E. long. $92^{\circ} 40'$ — $92^{\circ} 50'$ and, according to their story, they were made by a rajah named Sazar who lived in some very remote age, and that he made them "*nam ki waste*."

They are said to exist in great quantities in a hill termed Golsazar

about 10 miles N. N. E. of Saiping and that their being so present has given the name to the hill.

The only conclusion that I would offer as to their origin and use is, that they were made by some former race of hill-men, to store grain in, and that the lower unfinished half was set in the ground, but the makers must have been of a totally different race from the present inhabitants.

Mr. Blanford said that so far as an opinion could be found from the description and accompanying sketches, it seemed probable that the spheres in question were concretions, and therefore of natural origin. Concretions consisting of a hard shell containing loose sand were not uncommon in sands and friable sandstones; and sometimes gave occasion for much wild speculation. Their mode of formation was not perhaps well understood, nor was that of many other equally strange concretionary forms, but they were all the result of crystalline action, portions of the soft matrix being cemented together by some infiltrated mineral; in most cases either limonite, calcite or silica. Hollow concretions of the kind noticed had been described by Sir Samuel Baker in his recent work 'The Abyssinian tributaries of the Nile' as very abundant in the Nubian Desert; and were spoken of with the utmost confidence as volcanic bombs, with which, it was abundantly clear from his description, they had no relation whatever.

ON THE DETERMINATION OF THE LATITUDE AND LONGITUDE OF PORT BLAIR; EXTRACTED FROM LIEUTENANT-COLONEL J. T. WALKER'S REPORT ON THE OPERATIONS OF THE GREAT TRIGONOMETRICAL SURVEY OF INDIA IN 1865-1866.

In the year 1861, the Superintendent of Port Blair, the well-known convict settlement on one of the Andaman Islands, in the Bay of Bengal, reported to the Government of India that the position of the Great Coco Island, which lies immediately to the north of the Andamans, was so inaccurately laid down on the Admiralty Charts, that the safety of ships sailing between Calcutta and Singapore was endangered thereby; shortly afterwards, a communication was received from the Bombay Government representing that the longitude of Port

Blair itself, and consequently of the general group of the Andaman Islands, was equally doubtful.

It was therefore necessary to take steps to rectify the existing Charts, either by determining astronomically the absolute longitude of a station in each of the groups of Islands which lie between Cape Negrais, the southernmost point of the Burmese Provinces, and Acheen Head the northernmost point of the Island of Sumatra; or by the method of determining the latitudes and azimuths of mutually visible points on the groups of Islands and thence computing their differences in longitude. As the Islands trend in a nearly meridional direction from Burmah to Sumatra, the second method might if feasible be adopted, with the advantage of giving very much more accurate results than observations for determining absolute longitudes. Some of the groups of Islands are not ordinarily visible from each other; but, from a consideration of their distances and their heights above the sea, I am of opinion that luminous signals erected on lofty scaffoldings would be mutually visible at night; and if so their azimuths could be accurately measured, as the Pole Star never reaches a high altitude in these latitudes. It would also be an easy matter to execute at the same time an accurate triangulation, to fix the positions of certain of the surrounding Islands, some of which are known to rise to heights exceeding 1,000 feet above the sea level; thus an accurate basis might have been prepared for the topography of the Islands.

In consequence, however, of the want of adequate means to enable the Surveyors to pass from one Island to the other whenever convenient, it was necessary to abandon the method of combining Astronomical with Trigonometrical observations, and to restrict the operations to the determination of absolute latitudes and longitudes by Astronomical observations. At first it was intended that one or more points should be fixed in each of the several groups of Islands, but an intimation was subsequently received from the Secretary of State for India, that a complete Maritime Survey of the Islands would be made under instructions from the Admiralty, and that a battery of 15 chronometers would be employed for the determination of the differential longitudes. Consequently the operations were limited to fixing the position of Port Blair as a point of origin for the Maritime Survey.

For the longitudes it was decided to adopt the methods of Moon Culminations and Lunar Zenith distances, employing, for all the observations, one of the large Astronomical Circles which were brought out to India by Colonel Everest, and are described in his account of the Indian Arc; their vertical circles have a diameter of 3 feet, and the telescopes a focal length of $4\frac{1}{2}$ feet and a magnifying power of about 80. A temporary observatory with rotating dome was constructed at Calcutta and sent to Port Blair. Mr. Nicolson, an Assistant to the Surveyor General, was deputed to take the observations, and as from his previous training in the Trigonometrical Survey he was well qualified to observe Transits and Zenith distances, and as the latter observations can be multiplied to any desirable extent, whereas but few occultations and culminations can be observed during a short time, he was directed to base his operations on Lunar Zenith distances. He was furnished with an astronomical clock, a mean time chronometer, a collimator, a barometer, and thermometers.

His residence at Port Blair was protracted over a far longer period than had been anticipated; it was hoped that he would have been able to complete his observations before the commencement of the rainy season of 1862, but what with delays in getting a vessel to transport him and his instruments to Port Blair, delays in the voyage, and difficulties in getting workmen to set up the observatory, his preparations were only completed just before the monsoon set in, and for several months the weather prevented any continuous observations. Thus the work has been spread over a long time; but the results should be improved thereby, as the tabular errors of the moon's place are more likely to vary and tend to cancel each other in a long than in a short period.

After the greater portion of the observations had been completed, an accident happened to the astronomical clock which rendered it useless for a time; the chronometer was therefore employed for the remaining observations. Time was determined each night by the meridional transits of at least four Nautical Almanac Stars, half of which were observed with the illuminated pivot of the transit axis pointing to the east, and the remainder with it pointing to the west. The lunar zenith distances were, as a rule, taken in pairs, with the illuminated pivot to the left for one observation, and to the right for the

other, in order to eliminate instrumental errors. The moon's transits in altitude were taken over 5 horizontal wires, and corrections for inequality of motion were applied whenever necessary. Each observation was reduced independently after the application of the instrumental corrections, but as it appears from the results that the instrumental errors have not been determined with exactitude, the few single observations which were taken have been rejected, and only the pairs retained. The number of pairs is 101; the probable error of a single pair, when the astronomical clock was used, is ± 3.04 sec; with the chronometer it is 3.31, showing that the results were very slightly impaired by the loss of the services of the clock. The moon was observed both when north and when south of the prime vertical, and almost as many times when east of the meridian, as when west. The zenith distances range from 23° to $64\frac{1}{2}^\circ$; the moon's distance from the prime vertical never exceeded $17\frac{1}{2}^\circ$, and was usually much less; the azimuths ranged from 67° to 125° .

For the culminations it is only necessary to remark that 29 were observed, that the tabular elements were taken from the section "Moon Culminating Stars" of the Nautical Almanac, that the illuminated pivot of the instrument if pointing towards the east one evening, was usually pointed to the west on the next evening, and that the transit axis was reversed on its pillars six times during the course of the observations.

The probable errors of the zenith distances have been computed from the differences between the mean of each pair of observations and the general mean of the group to which the pair appertains. Those of the culminations have been computed from the differences between the single observations, and the general mean of all. Being calculated on the assumption that the tabular places in the Nautical Almanac are free from error, they are of course smaller than they would be if the probable errors of the tables were taken into consideration. But they sufficiently serve the purpose for which they are required, namely, to combine the separate groups of results with weights inversely proportional to their squares.

The results of the individual Observations are given below and the final results are as follows :—

Group	Number of pairs or single determination.	Longitude in time E. of Greenwich.	Probable error of a single culmination or a pair of zenith distances	Probable error of group.
		<i>h m s</i>	<i>s</i>	<i>s</i>
Moon Culminations,	29	6 10 50.64	± 6.79	+ 1.26
Lunar Zenith Distances to times by Astronomical Clock, ..	67	■ 10 50.58	3.04	0.37
Lunar Zenith Distances to times by Chronometer,	34	6 10 51.88	3.31	0.57
Final Longitude East of Greenwich,		{ In time, 6 h 10 m 50.92 s ± 0.30 s { In Arc, 92° 42' 43".8 ± 4".5		

It will be seen that the probable error by a single culmination is more than double that by a pair of zenith distances, a curious circumstance which could scarcely have been anticipated, and which shows that in tropical latitudes a few nights of observations of lunar zenith distances will give as satisfactory a result as observations of culminations extending over several months, for not more than 8 culminations can usually be observed in a month, and several of these may be lost if the weather is cloudy and unfavorable.

The latitude was deduced from observations of 17 stars situated to the north of the zenith and 20 stars to the south, the means of the two groups differing by only 0".08. The final result is—

North lat. 11° 41' 12", 85° 0' 11".

The probable error is computed on the assumption that there is no constant error in the Tables in the Nautical Almanac, from which the stars' places were taken.

The Observatory was situated on the highest point of Chatham Island at an altitude of 73 feet above the sea and about 30 feet to the south of the upper road from the Sepoy Barracks on the west of the Island to the officers' quarters on the east. It is 150 feet NE. of the east wall of the Sepoy Barracks, 130 feet NW. of the nearest corner of the house built for the Overseer of the Department

of Public Works, and 200 feet to the south of a salient point on the Coast. These measurements are taken from a block survey of Chatham Island, dated 20th May, 1865, which has been furnished by Lieutenant Cumming, R.E; the Executive Engineer at Port Blair.

The station is marked by a circular pillar of masonry rising a few inches above the ground level, on the surface of which there is a stone with a mark showing the exact point over which the Astronomical Circle was centered. The pillar has been covered with a cairn of stones, into which a marble slab has been built, containing the following inscription :—

THIS STONE MARKS THE SITE OF THE OBSERVATORY ERECTED IN 1861, ON CHATHAM ISLAND, FOR DETERMINING THE POSITION OF PORT BLAIR.

THE OBSERVATIONS WERE TAKEN BY MR. NICOLSON, OF THE SURVEY DEPARTMENT, WITH AN ALT-AZIMUTH INSTRUMENT, HAVING A VERTICAL CIRCLE OF 3 FEET IN DIAMETER. THEY WERE REDUCED IN THE OFFICE OF THE GREAT TRIGONOMETRICAL SURVEY OF INDIA.

RESULTS.

LATITUDE, 11° 41' 13'
 LONGITUDE EAST OF GREENWICH, 92 42 44

THE LONGITUDE WAS DETERMINED BY 202 OBSERVATIONS OF LUNAR ZENITH DISTANCES, AND 29 CULMINATIONS.

I may here observe that in the Admiralty Chart which was compiled from the Surveys of Lieutenant Blair and Captain Moorsom in 1789-90, and was revised by Lieutenant Heathcote in 1853, the longi-

Seconds of Results by Moon Culminations.

DATE.	RESULT.	DATE.	RESULT.
	s		s
5th June, 1862, ..	... 46·51	4th February, „ ..	... 44·85
6th „ „ ..	... 29·03	5th „ „ ..	.. 54·03
8th „ „ ..	... 50·00	6th „ „ ..	.. 50·00
9th „ „ ..	... 64·08	7th „ „ ..	.. 55·69
13th „ „ ..	... 43·74	9th „ „ ..	.. 71·17
14th „ „ ..	... 37·23	10th „ „ ..	.. 63·89
5th November, 1862, ..	.. 50·14	27th „ „ ..	.. 43·09
5th January, 1863, ..	.. 37·75	28th „ „ ..	.. 51·11
10th „ „ ..	.. 59·41	2nd March, 1863, ..	.. 52 17
11th „ „ ..	.. 61·42	2nd April, „ ..	.. 62·27
30th „ „ ..	.. 43·51	3rd „ „ ..	.. 52·88
31st „ „ ..	.. 47·12	4th „ „ ..	.. 50·13
1st February, „ ..	.. 45·21	6th „ „ ..	.. 56·73
2nd „ „ ..	.. 34·83	7th „ „ ..	.. 67·25
3rd „ „ ..	.. 43·32		

Mean = 6 h 10 m 50·64 s.

tude of Chatham Island is given as 92°56'. The whole group of islands is therefore about 13 geographical miles to the west of the position which has hitherto been accepted. The officers of the surveying brig *Clyde* determined the longitude to be 92° 47' 30" approximately, and it appears to have been in consequence of their representations,

Seconds of Results by Lunar Zenith Distance, when the Astronomical Clock was used.

DATE.		Moon's Aspect.		Results.		
		N. or S. of prime vertical.	E. or W. of meri- dian.	I. P. L.	I. P. R.	Mean.
6th February, 1863,	...	S.	E.	^s 46·22	^s 53·44	^s 49·83
ditto	...	...	...	46·99	54·01	50·50
ditto	...	...	...	55·96	55·75	55·86
7th ditto	..	...	...	46·32	41·31	43·82
ditto	...	...	...	54·47	54·17	54·32
ditto	...	...	...	55·66	55·08	55·37
ditto	..	...	...	52·93	56·57	54·75
ditto	..	...	...	55·83	60·01	57·92
8th ditto	..	...	...	54·17	56·58	55·38
ditto	..	...	...	49·04	66·21	57·63
ditto	..	...	...	55·55	53·93	54·74
ditto	..	...	...	52·40	57·14	54·77
ditto	..	...	...	54·46	65·00	59·73
ditto	..	...	...	56·64	65·51	61·08
ditto	..	...	...	56·94	57·69	57·32
26th ditto	..	N.	E.	52·25	52·01	52·13
ditto	..	...	...	46·91	43·30	45·11
ditto	..	...	...	45·22	47·80	46·51
ditto	...	...	...	41·83	53·43	47·63
ditto	...	...	...	47·00	52·61	49·81
ditto	..	...	...	44·59	49·37	46·98
ditto	..	...	..	47·84	46·11	46·98
ditto	..	...	...	39·65	50·73	45·19
ditto	..	...	...	45·80	49·85	47·83
ditto	...	...	...	35·87	55·88	45·88
ditto	...	N.	W.	53·56	53·50	53·53
ditto	..	...	...	55·24	50·40	52·82
ditto	...	...	...	57·62	50·40	54·01
ditto	..	...	...	53·26	47·02	50·14
ditto	...	..	...	55·80	54·34	55·07
27th ditto	..	N.	E.	47·19	50·90	49·05
ditto	..	...	...	41·52	45·61	43·57
ditto	..	...	...	41·53	56·29	48·91
ditto	..	...	...	36·88	55·60	46·24

Mean = 6 h 10 m 50·53 s

Seconds of Results by Lunar Zenith Distances, when the Astronomical clock was used.

DATE.	Moon's Aspect.		Results.		
	N. or S. of prime vertical.	E. or W. of meri- dian.	I. P. L.	I. P. R.	Mean.
27th February, 1863, ...	N.	E.	^s 47·04	^s 47·77	^s 47·41
ditto	45·89	46·92	46·41
ditto	42·47	47·45	44·96
ditto	45·39	56·03	50·71
ditto	46·24	45·31	45·78
ditto	45·84	47·73	46·79
ditto	44·78	46·07	45·43
ditto ...	N.	W.	46·32	45·88	46·10
ditto	45·75	50·09	47·92
ditto	46·51	44·72	45·62
ditto	48·49	41·55	45·02
ditto	51·44	51·50	51·47
ditto	50·13	45·07	47·60
ditto	42·34	54·91	48·63
28th ditto ...	N.	E.	45·43	48·18	46·81
ditto	40·30	56·86	48·58
ditto	40·89	52·68	46·79
ditto	45·91	56·42	51·17
ditto	50·14	55·54	52·84
ditto	49·51	66·84	58·18
ditto ...	N.	W.	54·53	61·54	59·54
ditto	60·99	54·64	57·82
ditto	49·84	50·58	50·21
ditto	50·26	48·00	49·13
ditto	45·98	52·39	49·19
ditto	46·16	41·15	43·66
ditto	44·94	48·20	46·57
ditto	59·42	46·47	52·95
ditto	51·02	49·43	50·23
ditto	55·92	49·44	52·68
ditto	51·72	54·37	53·05
ditto	55·07	51·92	53·50
ditto	58·11	46·20	52·16

Mean = 6 h 10 m 20.53 s

Seconds of Results by Lunar Zenith Distances, when the Chronometer was used.

DATE.		Moon's Aspect.		Results.		
		N. or S. of prime verticle.	E. or W. of meri- dian.	I. P. L.	I. P. R.	Mean.
				^s	^s	^s
25th March, 1863,	...	N.	E.	66.39	39.17	52.78
ditto	...	...	...	62.22	42.78	52.50
ditto	...	...	...	56.70	46.67	51.69
ditto	...	...	...	61.37	40.46	50.92
ditto	...	...	...	64.68	40.55	52.62
26th ditto	...	...	...	66.17	57.20	61.69
ditto	...	...	...	72.51	54.52	63.52
ditto	...	...	...	63.08	54.24	58.66
ditto	...	...	...	67.61	49.07	58.34
ditto	...	...	...	58.87	57.75	58.31
ditto	...	N.	W.	54.42	55.23	54.83
ditto	...	...	...	49.12	54.39	51.76
ditto	...	...	...	49.74	45.74	47.74
ditto	...	...	...	53.36	49.13	51.25
ditto	...	...	...	52.24	46.31	49.28
27th ditto	...	...	...	45.35	59.43	52.39
ditto	...	...	...	52.04	49.19	50.62
ditto	...	...	...	38.57	65.71	52.14
ditto	...	...	...	38.18	44.00	41.09
ditto	...	...	...	49.33	60.00	54.67
ditto	...	...	...	46.15	66.63	56.39
ditto	...	...	...	50.60	62.47	56.54
3rd April, 1863,	...	S.	W.	48.95	46.15	47.55
ditto	...	...	...	48.20	48.30	48.25
ditto	...	...	...	52.48	45.40	48.94
ditto	...	...	...	51.81	42.18	47.00
ditto	...	...	...	50.95	51.50	51.23
ditto	...	...	...	59.76	46.41	53.09
ditto	...	...	...	59.07	50.57	54.82
4th ditto	...	...	...	50.67	48.58	49.63
ditto	...	...	...	48.43	39.13	43.78
ditto	...	...	...	51.83	41.18	46.51
ditto	...	...	...	44.77	46.97	45.87
ditto	...	...	...	48.97	46.26	47.62

Mean = 6 h 10 m 51.88 s

that the Survey Department was called on by the Government of India to determine the true position.

Seconds of Diurnal Results by Zenith Distances.

DATE.	Number of pairs of obsesvatiens.	Result.
6th February, 1863,	3	^s 52·06
7th ditto,	5	53·24
9th ditto,	7	57·24
26th ditto,	15	49·31
27th ditto,	18	47·09
28th ditto,	19	51·31
25th March, 1863,	5	52·10
26th ditto,	10	55·54
27th ditto,	7	51·98
3rd April, 1863,	7	50·13
4th ditto,	5	46·68

When the Moon was north of the prime vertical, 74 pairs of observations were taken, result..... = 52·57
When the Moon was south of the prime vertical, 27 pairs of observations were taken, result = 52·12
When the Moon was east of the meridian, 52 pairs of observations were taken, result = 51·50
When the Moon was west of the meridian, 49 pairs of observations were taken, result = 50·44

LIBRARY.

The following additions were made to the Library since the meeting held in February last.

. The names of Donors in capitals.

Presentations.

Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften Philos-Historische classe; Band LV. Hefte I.—III. Math-Naturwissenschaftliche classe; Band LV. Hefte I.—II. :--K. K. AKADEMIE DER WISSENSCHAFTEN, WIEN.

Proceedings of the Royal Society of Edinburgh for 1866-67.—
THE ROYAL SOCIETY OF EDINBURGH.

Actes de la Société D'Ethnographie 12^e Liv.—THE ETHNOGRAPHICAL SOCIETY OF PARIS.

Transactions of the Royal Society of Edinburgh Vol. XXIV. part III.—THE EDINBURGH ROYAL SOCIETY.

Proceedings of the Royal Institution of Great Britain, Vol. IV. Parts V. and VI.—THE ROYAL INSTITUTION.

Zeitschrift der Deutschen Morgenländischen Gesellschaft, Bände XIX. XX. and XXI.—THE EDITOR.

Proceedings of the Natural History Society of Dublin Vol. IV. parts II. and III.—THE NATURAL HISTORY SOCIETY OF DUBLIN.

Proceedings of the Academy of Natural Sciences of Philadelphia for 1865 and 1866.—THE PHILADELPHIA ACADEMY OF NATURAL SCIENCES.

Selections from the Records of the Government of India, Foreign Department Nos. LXI. and LXII.—THE GOVERNMENT OF INDIA.

Purchased.

The Quarterly Journal of Science No. XVII.

Abhandlungen für die Kunde des Morgenlandes, herausgegeben von der Deutschen Morgenlandischen Gesselschaft, Band IV. 1—5.

Indische Studien X. 1, 2, 3.

Hewitson's Exotic Butterflies, part 65.

Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren, 1857-59, Zoologischer Theil, Mollusken.

The Edinburgh Review, January, 1868.

The Westminster Review, January, 1868.

Revue des Deux Mondes, 1st January, 1868.

Journal of the Statistical Society of London, Vol. XXX. part IV.

The Annals and Magazine of Natural History, No. 68.

Comptes Rendus Nos. 25, and 26, 1867.

Calcutta Review, February, 1868.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR APRIL, 1868.

A monthly general meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st instant at 9 p. m.

Dr. Oldham having declined to take the chair as President, it was unanimously resolved, on the proposition of Mr. Blanford, that the Honorable J. B. Phear, Vice-President, do take the chair.

Mr. Phear took the chair accordingly.

The minutes of the last meeting were read and confirmed.

The following presentations were announced :—

1. From Bábu Kedáranátha Banerji. A copy of *Venísamhára Náataka* of Bhaṭṭanáráyaṇa.

2. From Captain T. C. Anderson. A copy of *Proverbial Philosophy of Cats*, by the donor. A Copy of some Spanish Proverbs, collated by the donor. A copy of *Last Words of a few Celebrities* (concluded) by the same. A copy of 'Ubique,' being war services of all the officers of H. M.'s Bengal Army, by the same. A copy of the *Order of the Victoria Cross*, by the same.

3. From the Minister of Foreign Affairs, Paris. A copy of 'Le Livre des Rois, par Abou'l Kásim Ferdousi, publié, traduit et commenté par M. Jules Mohl; Cinquième Tome.'

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected as ordinary members.

H. S. H. Prince Frederic of Schleswig-Holstein.

Cumára Pramathanátha Ráya of Digápati.

W. M. Smith, Esquire.

Bábu Bholánátha Chandra.

Colonel H. Hyde, announced by a mistake of his agent as withdrawn, was reinstated at his request, in the member list.

The following gentlemen were announced as candidates for ballot at the May meeting, as ordinary members.

J. Baynes, Esq., Calcutta, proposed by Mr. Scott, seconded by Dr. Colles.

T. E. Coxhead, Esq., C. S., Meherpur, Nuddea, proposed by Mr. Giles, seconded by Mr. H. F. Blanford.

A. Pirie, Esq., Professor, Doveton College, proposed by Mr. Blochmann, seconded by Mr. G. Robb.

C. D. Field, Esq., proposed by the Hon. J. P. Norman, seconded by the Hon. J. B. Phear.

F. W. Peterson, Esq., Bullion Department, Mint, proposed by Mr. Blochmann, seconded by Mr. G. Robb.

The following gentlemen have intimated their desire to withdraw from the Society.

The Hon. L. S. Jackson ; J. Harris, Esq., Calcutta ; C. U. Aitchison, Esq., C. S., Lahore.

The following resolution of the Council was read.

“ Resolved unanimously.

“ That the following letters from Dr. Oldham be read at the next general meeting of the Society.”

“ *To the Members of Council of the Asiatic Society of Bengal.*

“ *Calcutta, March 18th, 1868.*

“ GENTLEMEN,—I have to thank several of you for meeting me yesterday to consider the circumstances attendant on the election of myself as President and of other Officers on the 15th January last. You are aware that no question was raised as to the fact that Rule 47 of the Bye-laws had not been complied with on that occasion ; no excuse or cause for the omission given ; no assertion of ignorance of what that law required. It was simply treated as an informality so trivial as to call for no notice, and it was even sought to be defended by showing that several other Rules had been systematically neglected !! The fact, that the Meeting had not been summoned, and consequently not held, as required by the laws of the Society, and that this was allowed to occur with the knowledge of what those Rules required, was placed beyond a doubt.

“ A resolution was passed, which, with all respect I am obliged to say, simply begged the question. No one ever had doubted, no one could

doubt, the legality of the Meeting, or of its decisions, if it were 'held in accordance with the Bye-laws of the Society.' But this is precisely what it confessedly was not. The opinion, therefore, given by the Council, based, as it avowedly was, on this totally unsound premises, is valueless. The process of reasoning by which the individual statements of every Member present, that Rule 47 had not been complied with, were converted into a collective assumption that the Meeting was 'in accordance with the laws of the Society,' is to me unintelligible. Nor can I admit the force of the argument, though I can understand it, which preferred the ignoring of those laws to openly confessing that a 'trivial informality' had occurred.

"On matters of opinion, I am very willing to be guided by the better judgment of others; on matters of fact, I am compelled to form and act on my own. Indeed the facts are undisputed, and no interpretation of them is needed.

"The principle sought to be established, that where an error has occurred, (for which the remedy is extremely simple) it is better to gloss it over, and say nothing about it, than at once to declare the neglect and rectify it, is one which may possibly be successfully acted on by your Council, but which the experience of every other Society in the world, I believe, has shown to be inevitably productive of failure.

"The duties of the President are defined by the Rules under which he is appointed, and under which alone he can hold office, to be (Rule 87) * * * 'to execute or see to the execution of the Rules and Orders of the Society.' Yet the very first act requested of me by the Council, is to see that one of those Rules affecting the constitution of the Society be deliberately and knowingly violated! Gentlemen, I very respectfully, but very decidedly, decline to do so.

"No amount of opinions or glossing can alter this simple fact. I cannot therefore adopt the views of the Meeting of yesterday in this way. But in another way I am glad to be able to meet the wishes of some of the Members. However intended, the resolution passed yesterday was, under the circumstances, tantamount to the expression of a desire that I should not be President. I am rejoiced to be able to assure the Meeting and the Council generally that believing I was not duly elected, I shall certainly not act as President; unless the elective

body (the Society, not the Council) see fit to call upon me, constitutionally, to do so, when I shall be happy to devote my best efforts to their service.

“The requisition sent to me personally as President, calling for a Special General Meeting in accordance with Rule 63 to ‘alter, annul, or confirm, as to said Special Meeting may seem fit, the proceedings of the Meeting of January 15th, 1868, such Meeting not having been held in accordance with the Rules of the Society’—has been returned to the requisitionists with a statement that as I am not President I have no power in the matter.”

“I have the honor to be,

“GENTLEMEN,

“Your very obedient Servant,

THOMAS OLDHAM.

“*To the Secretary Asiatic Society of Bengal.*

“*Calcutta, March 27th, 1868.*

“DEAR SIR,—As it will be necessary to give to the members of the Asiatic Society, a reason why I have not assumed the office to which they supposed they had elected me, I beg to send you a copy of letter to them giving my reasons, which, if thought desirable, can be read to the meeting of the Society.

“Yours truly,

“THOMAS OLDHAM.”

“*To the Members of the Asiatic Society of Bengal.*

“*Calcutta, 7th March, 1868.*

“GENTLEMEN,—On my return to Calcutta yesterday evening, I found that, during my absence, at a meeting purporting to be the Annual General Meeting for the election of Officers, &c., held on the 15th of January 1868, I had been almost unanimously selected as President of your Society for the coming year. I have on more than one occasion previously declined to allow myself to be considered a candidate for the Chair of the Society, believing the fact of my not being a permanent resident of Calcutta in itself a sufficient disqualification. And still holding this view, I had recently stated to several my great unwillingness to accept the office. But I should be indeed unmindful of the kindness of those who, with the full knowledge of this, still

elected me, did I not under the circumstances sink my own opinion on this point, and endeavour to justify the confidence placed in me, by devoting my best efforts for the benefit of the Society.

“ I should therefore, have accepted the office of President with just pride ; but that, as I believe, the meeting of the 15th January 1868, was held in direct contravention of the Bye-laws of the Society (Bye-law No. 47*), that its proceedings are at any moment open to question, and that I have, therefore, as in consequence of that supposed election, no right whatever to assume the office.

“ No one can be more fully alive than I am to the likelihood, I might say, to the certainty, of oversights occurring in conducting the business of such a Society ; and of occasional apparent disregard of the laws resulting from such oversights. And from the conviction that it might have been an oversight, I took no objection on a former occasion when a similar case occurred. But in the present instance, there was no oversight, there was warning beforehand, and abundant knowledge of the requirements of the laws. Any neglect to comply with them was therefore *knowingly* committed. The wishes of those who selected me have been thus frustrated, and I am compelled to decline accepting the honor intended to be conferred on me.

“ It may be an inconvenient opinion, but it is a deliberate one confirmed by experience in the working of other Societies as Member, Secretary or President, that success in the conducting of such a body is *impossible*, excepting the laws established for its constitution, and to which every Member on admission declares his adhesion, be acted up to. Those laws may be unnecessary, inexpedient, or even simply inconvenient, and if so, the sooner the needless, inexpedient, or inconvenient provisions be altered the better. But as the only claim which the executive of any such Society has even to ask for the subscriptions of its Members (without which the Society cannot work), is a strict adherence to the constitution of the Society, every knowing violation of the laws of such constitution is only a misleading of the Members. And certainly, the constitutional right of every Member to take part, if he chooses, in the election of Officers, and to see that all or any undue influence be prevented by that election being carried on only

* “ 47. Notice of the annual meeting shall be inserted in two or more Newspapers one week at least before the day of meeting.”

after due public notice, is not the least important right attached to membership of the Society.

“ I feel that the chair of the Asiatic Society of Bengal is one of the highest scientific rewards which can be obtained in India. And I most fully appreciate the honor intended for me by selection for that office. I should, however, be false to myself, and false to the Members of the Society, if with the strong conviction I hold as to the inevitable results of such infringements of the laws of the Society, knowingly committed, I were to allow any personal considerations of honor to outweigh my convictions.

“ Under these circumstances, I do not therefore, hesitate to decline assuming the responsibilities of an office to which, as I believe, I have not been legally elected, being still ready and willing, as I have always been, to exert myself for the advantage of your Society, as constituted, to the utmost of my power.

“ *March 18th, 1868.*

“ The forgoing letter was intended for immediate circulation to the Members of the Society. On the 12th instant I received the official notification of the election, *dated 6th February*, (which had miscarried and had been returned to me from Madras). And being naturally anxious to remedy the lache which had occurred, and yielding to the views of others, I immediately requested a special meeting of the Council. This took place on the 17th instant. I stated my information, as to the facts—these were in no way questioned. I stated also my determination as above, not to accept the office unless such irregular election were duly confirmed, and I pointed out the simple mode of remedying the mistake by a special general meeting of the Society, showing that under Rule 63—such could be called by the Council, or by the President, on a requisition from six Members of the Society. I further stated, that I had already received such a requisition, properly signed, which, if President, I would have no option but to comply with. And I left it to the Council to say what they would do. After discussion, the following resolution was passed that—‘In the opinion of the Council as *Dr. Oldham was elected President at a general meeting held in accordance with the Bye-Laws of this Society*, his election is legal and valid, notwithstanding some informality in the notices convening the meeting which appear to

have been issued only three days instead of seven days before the day of election. The Council are informed that the irregularity of the notices was remarked by several Members of the Society before the meeting, but no one at the time raised any objection to the notices of the meeting, that the business should not be proceeded with in the usual course.'

"And the meeting separated.

"This will show that I am still unable to accept the office.

"The respect due to my fellow-members of the Asiatic Society has made it necessary to make them acquainted with the facts. I cannot submit to be a party to an avowed neglect of the rules affecting all your officers, which is treated as of no importance, being one of a number of other departures from the laws of your Society."

"I have the honor to be,

"Gentlemen,

"Your very obedient Servant,

"THOMAS OLDHAM."

The Chairman in giving notice of the following motion on behalf of the Council remarked—

That in the absence of a President, it devolved upon him as senior Vice-President to explain to the Society the action which the Council had felt it incumbent on them to take, upon the receipt of the letters which the Secretary had just read. He premised, however, that according to the rules of the Society, (to which he referred specifically,) the subject of the communication, which he was about to make, could not be treated as matter of discussion at this meeting. But it was necessary, under those rules, that a formal notification of the proposals of the Council should now be made to the Society in order that they might be legitimately considered and determined upon at a subsequent Special Meeting to be convened for the purpose. He then stated shortly the facts connected with the election of Dr. Oldham as President of the Society, namely,—that he was nominated to that post in the usual manner by the almost unanimous voice of the Council, and that he was afterwards elected by the Society, at the Annual Meeting, which is fixed by the rules to be held not later than the third Wednesday of January for the election of officers, and which this year took place on the 15th of that month. At

that time, Dr. Oldham was absent from Calcutta, and he did not receive notice of his election until his return some weeks later. When however, he got this notice, he objected that the advertisements of the Annual Meeting of the 15th January had not been published a sufficient number of days before the meeting according to the rules which specified seven days in that respect, while only three had actually elapsed between the publication and the meeting. On this ground he maintained that the meeting at which he had been elected was no proper meeting for the election of officers, and consequently his pretended election was void. After this, a special meeting of the Council was held at the request of Dr. Oldham, at which he was present and stated his views. The Council then unanimously resolved that notwithstanding the irregularity in question relative to the advertisements, the election of the President was perfectly valid, and they called upon Dr. Oldham to say whether he would accept the office or not. Dr. Oldham's answer is exhibited in the letters now placed before the Society. In substance, he denies that any real election has yet taken place for this year, and demands that proceedings should now be taken *de novo* for the purpose of effecting one. It was impossible for the Council to concede to this. In their view, the correctness of which, he [the Chairman] was not now concerned to discuss, there had been a perfectly valid election, and the Council could of course only act according to the facts as they themselves saw them. Under these circumstances, they would have been justified, no doubt, as the executive body of the Society, in treating Dr. Oldham's behaviour as amounting virtually to non-acceptance of the office tendered to him. If they were right, the Society had offered Dr. Oldham its highest office, and he had not within a reasonable time signified his acceptance of the offer. The Council might therefore on their own responsibility have taken the necessary steps for the election of another person. They have thought it better, however, to lay the whole matter before the Society, while at the same time they have considered it to be their duty to recommend the Society to act in it in accordance with the view, which they, after much consideration, have already taken. As the organ of the Council, he therefore now begged to notify to the Society that Wednesday, 6th of May, had been fixed as the day for a Special Meeting to

consider this matter, and that the Council would then recommend the adoption of the following resolution :—

“That the office of President be declared to be vacant, inasmuch as Dr. Oldham has declined to accept it or to assume its duties, after having been duly elected thereto, and informed of that election.”

He would add that one great advantage to be gained by the Council thus taking the initiative in the matter, would be the saving of time which would result, because it would thus under the rules be unnecessary to make a reference back to the Council before a final decision could be come to, as would otherwise have to be done.

Dr. Oldham having received permission of the meeting to make some remarks, proceeded to give notice.

“That at the special general meeting on the first Wednesday in May on the resolution of the Council just read being proposed, he will move as an amendment, that the words commencing ‘after he had been duly elected &c.’ to the end of the resolution, be omitted, being inconsistent with the facts.”

Sir R. Temple asked of the Chairman whether this meeting was competent to pass a vote confirming the election at the annual general meeting.

The Chairman replied that undoubtedly it was not so competent.

Mr. E. C. Bayley then asked, whether a Committee elected by the Society could not decide the question ‘whether the irregularity which had been committed, rendered the election void or voidable.’

The Chairman replied that personally he entertained no doubt that the election had not been rendered void or voidable, but that the whole question might be discussed by the Society at the Special General Meeting.

Mr. Justice Norman remarked that such informalities of notice do not invalidate parliamentary elections.

Colonel R. Strachey then gave notice that at the Special General Meeting of 6th May, he will move as an amendment to the resolution of the Council—

“That the informality in the publication of the notice of the last Annual General Meeting of the Society is not of a nature to invalidate the election of Dr. Oldham as President, and that he was therefore duly elected and is the President of the Society.”

The Council reported in favour of a recommendation made by the Philological Committee, to publish the *Muntákháb ul Labáb* of Kháfí Khan and the *Maásir-i-Alamgiri* in the Persian Series of the *Bibliotheca Indica*.

The following note by Major Lees was laid before the meeting.

“The *Badshahnamah* and *Alamgirnamah* having been completed, it becomes necessary to select two other works for the Persian Series; and these two have already been provisionally accepted by the Philological Committee; they are the *Muntakhab ul Labab* commonly called *Kháfí Khán*, and *Maasir Alamgir*.

“I will take the latter first. It is known that Alamgir issued strict injunctions in the first year of his reign, that no historian should chronicle the events of his reign. Up to this period we have the history of Mahommad Kázim which was compiled by his order. This is styled the *Alamgirnamah*, and has been published already by the Society. For the latter period of this long reign, we have as yet published nothing; and the two works which are mentioned, are I think the best available. The *Maasir Alamgiri* is a small work, and will not occupy more than three and a half to four fasciculi. The author Muhammad Sáki Mustaid Khan, held an office at the court; and had capital opportunities of obtaining good information, besides which, it is supposed that he made memoranda during the lifetime of Aurangzeb which he afterwards employed for his history. The first portion of his history is an abridgment of Muhammad Kazim's history, and it might be omitted; but there seems to be an objection to the publication of mutilated editions, and many think that it injures the sale. It certainly does in India.

“But of far greater importance for the history of this and the subsequent period, is the history of Kháfí Khan. This is truly a noble history, and its publication will add considerable lustre to the Persian Series. It has been used by Elphinstone and other English historians; but very partially, and its use, so far from having been superseded, has been rendered the more necessary by the frequent references we find to this work in their pages. The book is so well-known, that it is unnecessary to give an extended notice of it. Suffice it to say, that it embraces the period from Tímúr till the 14th year of the reign of Muhammad Shah. But from the times of

Tímúr to Shah Jehan, the subject is treated in the abstract, the history becoming enlarged gradually as the author approaches his own times. The first portion, however, for the reasons before assigned, should be printed as well as the last. The author was certainly the most competent historian of his period, and his criticisms upon other historians are not without value. In the publication of this work, moreover, the Society will secure the history of a period of 26 years after the death of Aurangzeb, during which Kháfi Khán was a contemporary writer. During this interval seven kings reigned. Azim Shah, Bahadur Shah, Shah Aalam, Azim us-Shein, Jehandar Shah, Farokshir, Rafi ud Diraját, and Mohammed Shah. Some of these kings only reigned a few months, and of the whole period of 26 years, 14 belong to Mahomnad Shah. Manuscripts of Kháfi Khan are very numerous. There are four in the Society, two of which are complete, and two or three more could doubtless be obtained in Calcutta and the neighbourhood, but *perfect* copies, *i. e.*, good and accurate copies are rare, and the discrepancies between some of the copies I have seen are so great as to warrant the supposition that there were two editions of the work. Some care therefore will be required in editing this valuable history. Maulawi Kabir ud-din and Maulawi Gholam Qadir, the two resident Munshis of the Madrassah, would, I think execute the work well. The former has an acquaintance with the requirements of critical editing, and understands the value of variations in readings, and how to discriminate between copyist's errors, and doubtful texts; and the latter is a good Persian scholar.

"For the smaller works the Maasi i Alamgiri, Maulawis Abd al Hye and Ubd ur Rahím will perform the duties of editors I think efficiently. The former has a knowledge of English, and has edited and assisted in the editing of very many texts for the Society."

The following letter from Dr. R. H. Curran forwarding pieces of gold and silver found under the skin of a Burmese convict at the Andaman Islands, was read.

Port Blair, Andamans.

March 4th, 1868.

"SIR,—I have the honor to forward for the Asiatic Society, the enclosed pieces of gold and silver which I accidentally found whilst

making a *post mortem* of a Burman convict, who was hanged here, in December last. There were twelve pieces of each metal enclosed in separate but dense capsules beneath the skin.

“On proceeding to open the chest, I found the first two pieces of gold on either side beneath the integuments. The remaining gold pieces were found on each arm, and the silver in the forearms. There was no mark on the outer skin to indicate that any foreign body lay beneath, but by carefully feeling along the arms, small hard bodies could be detected.

“On enquiring, I find Burmans are in the habit of inserting these bodies, as charms for sickness, or for the purposes of averting impending danger. The man from whom these were removed, was known in Burmah, as a desperate and dangerous character. The charms did not appear to have the desired effect.

“There is some writing on those coins, but I am unable to make it out.”

(Sd) R. H. CURRAN.

The Secretary then read the following letter from Mr. Mulheran, describing the Cromlechs of Central India: communicated by Colonel H. L. Thuillier.

Camp, 12 miles W. of Hanye.

4th February, 1868.

“MY DEAR COLONEL,—I have much pleasure in acknowledging your letter of the 12th Instant and hasten to forward prints from the Photographs to which you refer.

“Cromlechs of the form illustrated in *Photograph No. 4* [Pl. I. fig. 2] are found in great abundance on both banks of the Godavery in the neighbourhood of Albaka, and in the low ridges west of the canal above Duma-gadium. The majority of the Cromlechs consist of a number of upright stones sunk into the ground in the form of a square, and covered with one or two large slabs of sandstone. In some, two bodies, or rather their remains, appear to have been interred. In others only one. The crosses are found in the neighbourhood of Malúr, and Katapur, two villages on the Nizam's side of the river. I have not seen the Cromlechs near Albaka, but have been informed by those who have, that no crosses are found near them. The cross at Malúr has both of the arms broken,



Fig 1



Fig 2

*Stone cross and Kiel at Katapur
CENTRAL INDIA.*

Left from a Photograph by Kall Das Paul Student Govt School of Art Cal

one near its stem, and is lying on the road to the cave under the hill. The crosses at Katapar with one exception are uninjured. All are situated to the right of the Cromlechs near which they have been erected. Judging from the one lying exposed at Malúr, they are all about 10 feet in length, although only 6 and 7 feet appear above the ground. They consist of one stone, and are all of the Latin form. No information of any kind could be obtained regarding the people by whom the crosses and Cromlechs were erected. There can, however, be no doubt that the crosses are memorials of the faith of Christians buried in their vicinity; but by whom erected, and at what time, has still to be ascertained. The isolation of the broken cross at Malúr, if not erected as a road-side memorial, is very puzzling. The whole of the Cromlechs at Malúr are found near the summit of the ridge, which is about 250 feet above the path leading to the cave. Assuming the cross to have been broken while in transit to the ridge, it is difficult to understand the reason of its being found on the side opposite to that on which the Cromlechs are situated. If broken while in transit to the cave, then the cave itself must be another form of the Cromlechs crowning the hill, and if so, it is the largest, and most interesting of the whole series. My own impression is, that the Malúr cross wherever erected, was thrown down after the conversion of the cave into a temple by Brahmins from the neighbourhood of Badrachalam. In all probability the Brahmins know nothing regarding the original use of the cave, and have not, in consequence, disturbed the cement used to preserve the remains below. What struck me as peculiar in this excavation, was its small entrance. The surface of the rock above is carved to the height of 10 or 12 feet. The cross is also slightly carved, but although similar in form to those at Katapar, it is less angular in its general outlines.

“I enclose Captain Glasfurd’s note to me about the crosses, from which you will see that he first drew my attention to them, and suggested my taking the Photographs enclosed. If I am not mistaken he sent drawings, and a packet of the implements, rings, and utensils found in two of the Cromlechs that he opened, to the Asiatic Society,* of which he is a member.

“I am taking a set of Photographs of the wild people inhabiting the

* No such donation has been received by the Society.—Ed.

Chundwara ridges, including the Chiefs (Gond) recognised by Government, and in possession of the Jagheers of Hurrye, Sonpur, and Pratghar. The Chiefs of Hurrye and Sonpur are stone blind, and pit objects, as you will see when the Photographs reach you. Their appear to have inherited the disease, and will in time lose sight, the eyes of one being already affected. As soon as I completed the set, I will send you a packet of prints. The uncombed heads of the wild Gond women will astonish you. Major Wood Deputy Commissioner, has written to all the Chiefs to assist me, and find all exceedingly civil and obliging. I am getting on very rapidly with my work, the forest fires not yet having interfered with observations. I have only one more principal station to visit. the rest are secondary points, but I am observing verticals of all, will furnish a complete table of heights.

Yours very sincerely,

J. MULHERAN.

A discussion took place on the subject of this letter, and accompanying photographs, in which Mr. Blanford, Dr. Colles, Oldham, Mr. Bourke, Mr. E. Bayley and others took part.

The receipt of the following communications was announced.

1. A memorandum on Elephants by Lieut. J. Johnstone.
2. On the birds of the Goonah District by Dr. G. King.

The Chairman announced, the night being far advanced, that unless the contrary were particularly desired by the members, the reading of the following papers announced for this evening would be postponed to the meeting in May.

1. A memorandum on Elephants.
2. Extracts from the Narrative Report of a route Survey from Nepal to Lhasa.

LIBRARY.

The following additions were made to the Library since the meeting held in March last.

. The names of Donors in capitals.

Presentations.

Jahrbuch der Kaiserlich-Königlichen Geologischen Reichsanstalt Wien 1866, No. 4 ;—The K. K. GEOLOGISCHEN REICHSANSTALT.

Magnetischer Atlas gehörig zum Magnetismus der Erde von C. Hansteen Professor, Christiania 1819.—DET KONGELIGE NORSKE UNIVERSITET-I-CHRISTIANIA.

Meteorologiske Iagttagelser paa fem telegrafstationer ved Norges Kyst reducerede og Sammenstillede af J. J. Astrand, Første og anden aargang udgivne af det Kongelige Norske Frederiks Universitet ved C. Fearnley.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Meteorologiske Iagttagelser i det Sydlige Norge 1863, 1864, 1865, 1866.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Meteorologiske Iagttagelser paa Christiania Observatorium 1866.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Nyt Magazin for Naturvidenskaberne udgives af den Physiographiske Forening i Christiania ved M. Sars og Th. K'jerulff.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Morkinskinna Pergamentsbog fra Første Halvdel af det Trettende Aarhundrede Indeholdende en af de Ældste optegnelser af Norske Kongesagaer. Udgiven af C. R. Unger.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Forhandlinger i Videnskabs-Selskabet i Christiania, Aar 1865.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Om Çivaisme i Europa af C. A. Holmboe.—THE AUTHOR.

Om Tallene 108 og 13 af C. A. Holmboe.—THE AUTHOR.

Det Kongelige Norske Frederiks Universitets Aarsberetning for Aaret, 1866, Med. Bilage.—DET KONGELIGE NORSKE UNIVERSITETS I CHRISTIANIA.

Index Scholarum in Universitate Regia Fredericiana centesimo nono ejus semestri anno 1867 ab augusto mense incunte habendarum.—DET KONGELIGE NORSKE UNIVERSITETS I CHRISTIANIA.

E'tudes sur les Affinités Chimiques par C. M. Guldberg et P. Waage.—DET KONGELIGE NORSKE UNIVERSITETS I CHRISTIANIA.

Untersuchungen über den Magnetismus der Erde von C. Hansteen.—DET KONGELIGE NORSKE UNIVERSITETS I CHRISTIANIA.

General report on Public Instruction in the Lower Provinces of the Bengal Presidency for 1866-67.—THE DIRECTOR OF PUBLIC INSTRUCTION, LOWER PROVINCES.

Proceedings of the Royal Society of London, No. 97.—THE ROYAL SOCIETY OF LONDON.

Über ein Fragment der Bhagavati; ein beitrage zur kenntniss der heiligen litteratur und sprache der Jaina von A. Weber; Zweiter Theil.—THE AUTHOR.

Zeitschrift der Deutschen Morgenländischen Gesselschaft, Band XXI. Heft IV.—DEUTSCHEN MORGENLANDISCHEN GESSELLSCHAFT.

Wissenschaftlicher Jahresbericht über die Morgenländischen Studien 1859 bis 1861 von Dr. R. Gosche.—DEUTSCHEN MORGENLANDISCHEN GESELLSCHAFT.

La Femme dans l'Inde Antique; études morales et litteraires, par Mlle. Clarisse Bader.—MLLE. CLARISSE BADER.

Atti della R. Accademia delle Scienze di Torino, Vol. II. Disp 4-7.—ACCADEMIA R. DELLE SCIENZE DI TORINO.

Memorie della Reale Accademia delle Scienze di Torino, Vol. XXIII.—ACCADEMIA R. DELLE SCIENZE DI TORINO.

Almanach der Kaiserlichen Akademie der Wissenschaften, XVII.—KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU WIEN.

Fontes Rerum Austriacarum, Oesterreichische Geschichts Quellen, Band XXVII.—KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU WIEN.

Archiv für Oesterreichische Geschichte, Band XXXVIII. Heft I.—KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU WIEN.

Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Philos.-Histor. Classe, Band LVI. Hefte I.—III. Mathematisch-Naturwissenschaftliche Classe, Band LV. Hefte III.—V, Band LVI. Hefte I.—KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU WIEN.

The Proverbial Philosophy of Cats; by Captain T. C. Anderson.—THE AUTHOR.

Some Spanish Proverbs collated by Captain T. C. Anderson.—THE EDITOR.

Last words of a few celebrities (concluded); by Capt. T. C. Anderson. THE AUTHOR.

Ubique; War services of all the officers of H. M.'s Bengal Army; by Captain T. C. Anderson.—THE AUTHOR.

The Order of the Victoria Cross for Valour; by Captain T. C. Anderson.—THE AUTHOR.

Venisamhára-Náatakam of Bhaṭṭanárāyaṇa.—B'ABU KEDA'RANA'THA BANDOPA'DHYA'YA.

Actes de L'Académie Impériale des Sciences, Belles Lettres et Arts de Bordeaux, 3, 1867.—THE ACADEMY.

Report on the Land Revenue Administration of the Lower Provinces for the Official year 1866-67.—THE GOVERNMENT OF BENGAL.

Selections from the Records of the Government of India, Foreign Department Nos. LXI. and LXII.—THE GOVERNMENT OF BENGAL.

Bombay Sanskrit Series No. I. Panchatantra.—THE EDITOR.

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Purchase.

The Ferns of British India; by Captain R. H. Beddome, Part XVIII.

Pratna Kamra Nandini, No. 7.

Revue des Deux Mondes, 15th January, 1868.

Revue et Magasin de Zoologie, No. 12, 1867.

Revue Archéologique, I. 1868.

Comptes Rendus, No. 27, 1867 and No. 1, 1868.

Journal des Savants, December, 1867.

Roth and Böhtlingk's Sanskrit Wörterbuch, Lief, 36.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MAY, 1868.

In pursuance of Notice issued by the Council, a Special General Meeting of the Society assembled on May 6th, 1868, at 9 P. M.

It was proposed by the Hon'ble J. P. Norman, and seconded by Dr. Colles, "That the President do take the chair."

After some pause, Mr. Oldham said, that if he were intended by the words of this proposition, he would be very happy to take the chair, as Mr. Oldham, if the meeting so wished, but that the question really to be decided was, whether he were President or not.

Dr. Colles then proposed as an amendment, 'That Mr. Oldham do take the chair.' This was put to the vote and lost. It was then proposed by Mr. H. F. Blanford and seconded by Mr. Mackenzie, and carried, 'That the Hon'ble J. B. Phear do take the chair.'

The Chairman then called on the General Secretary to read the minutes of the last ordinary meeting which he proceeded to do, when it was proposed by Mr. Oldham and seconded by Mr. Scott, that the business of the special meeting summoned for 9 o'clock P. M., be proceeded with before that of the ordinary meeting—Carried.

The Meeting was accordingly made special.

The Chairman said that it was his duty, as representative of the Council, to propose to the Meeting the resolution which the Council recommended for adoption. But he thought that, as he occupied the Chair that evening, it would be unbecoming in him to offer any remarks either in favour of, or against, the resolution. He would

therefore confine himself to calling on the Secretary to read the letters from Mr. Oldham. (These have been already published, see Proceedings for April, 1868.) He then proposed on the part of the Council, the resolution itself in the following words :—

“ That the Office of President be declared to be vacant, inasmuch
“ as Dr. Oldham has declined to accept it or to assume its duties,
“ after having been duly elected thereto, and informed of that elec-
“ tion.”

A question being raised, as to whether this resolution required to be seconded, it was moved by Mr. Bourke, and seconded by Dr. Colles, and carried, “ That resolutions coming from the Council do not require to be seconded.”

After a considerable pause, Mr. Bourke wished to propose an amendment on the resolution of the Council, but the Chairman, on hearing it, stated that it could not be accepted as an amendment. Being a substantive proposition in itself negating the original proposition, it might be considered after the resolution had been disposed of, but not till then. Mr. Bourke would wish to alter the wording, but the Chairman not accepting this either, Mr. Bourke said his only course then was, to adopt unquestioned precedent, and frame the amendment out of the actual words of the resolution—He moved,

“ That the word ‘ not’ be inserted between the words ‘ be’ and ‘ vacant,’ and also the word ‘ not’ between the words ‘ has’ and ‘ declined.’ ”

Mr. Oldham moved the amendment of which he had given notice :
“ That the words of the resolution, from ‘ after having been’ &c.; to the end be omitted, being inconsistent with the facts.” The question for the meeting to decide was, whether there had been a due election of officers, he declined to assume the duties of the Presidentship *until* a decision on that point had been come to by the only competent body,—the Society—but he had not declined the office *after* such due election.

Dr. Waldie wished to propose, “ That the Society do not consider the informality in the proceedings of the last Annual General Meeting to be of such a nature as ought to vitiate the proceedings of that meeting, and resolve that the election of President and Council then made, be ratified and confirmed.”

The Chairman stated that this was open to the same objection as he had already expressed with regard to others, it could not be accepted as an amendment, but might be brought forward afterwards, if it were desired.

After some discussion, in which Dr. J. B. Partridge, Mr. Oldham, Mr. Blanford, Mr. Mackenzie, Dr. D. B. Smith, and Colonel Thuillier took part. Mr. Oldham's amendment was put to the vote and, on a show of hands, was declared lost.

Mr. Bourke's amendment, "That the office of President be declared to be not vacant, inasmuch as Dr. Oldham has not declined to accept it or to assume its duties, after having been duly elected thereto, and informed of that election," was then put to the vote.

A show of hands was called for, and this amendment also was declared to be lost.

The original resolution of the Council was then put, (as above) and, on a show of hands, it also was declared to be lost.

Mr. Oldham then moved and Dr. Waldie seconded, That the proceedings of the Annual Meeting on 15th January, 1868, be confirmed. Mr. W. S. Atkinson moved as an amendment.

"That in the opinion of this meeting the informality in the publication of the notice of the last Annual General Meeting of the Society was not of a nature to invalidate the election of the President and Council, and that they were therefore duly elected, and are respectively the President and Council of the Society."

This was seconded by Dr. Colles, and was put to the Meeting and declared by the Chairman to be carried.

Mr. Blanford said that in consequence of this resolution, he begged to resign his office of General Secretary to the Society.

The Special Meeting was then dissolved.

The meeting then resolved itself into a general monthly one.

Dr. T. Oldham, having taken the chair, desired the Philological Secretary, in the absence of the General Secretary, to read the minutes of the last meeting, which were thereupon read and confirmed.

The following presentations were announced—

1. From the Royal School of Mines, through Dr. T. Oldham, a

copy of Portlock's Geological Report on Londonderry and parts of Tyrone and Fermanagh.

2. From Lieutenant-Colonel G. Mainwaring, 2 copies of a Lepcha Primer.

3. From J. S. Carlile, Esq. of Melbourne through Mr. G. Robb, a copy of a Vocabulary of dialects spoken by the aboriginal natives of Australia: a copy of Statistiques des Mines et des Mineraux par R. B. Smyth, and a copy of a Memorial of the Victorian Exhibition, 1866, consisting of a verse from the Holy Writ in above one hundred languages.

4. From J. Gregory, Esq. 13 pieces of silver Jayanti coins.

5. From Captain H. C. E. Ward, four specimens of *Physa Prinsippii* from Sánk-ká páháda in the Mandla district.

6. From Dr. A. C. Maingay, a collection of skins of rare and little known birds from Malacca.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected ordinary members.

J. Baynes, Esq,

T. E. Coxhead, Esq.

A. Pirie, Esq.

F. W. Peterson, Esq.

C. D. Field, Esq.

The following were nominated as candidates for ballot at the June meeting.

E. Buck, Esq. C. S., Cawnpore ; proposed by Mr. Grote, seconded by Dr. Colles.

Bábu Yatíndramohana Thákura ; proposed by Bábu Rájendralála Mitra, seconded by Mr. H. F. Blanford.

H. Reinhold, Esq. ; proposed by Dr. Stoliczka, seconded by Dr. Fayrer.

Dr. C. R. Francis, for re-election ; proposed by Mr. H. F. Blanford, seconded by Dr. J. A. P. Colles.

A letter from R. A. Sterndale, Esq. intimating his desire to withdraw from the Society was recorded.

The Council's recommendation for the publication of an English translation of the 'Aín-i Akbari in the Bibliotheca Indica was adopted

A letter from Sir R. Temple forwarding copies of correspondence with the Commissioner of Coorg, respecting an interesting discovery of a number of ancient Cromlechs in South Coorg, was laid on the table. Also a letter from Colonel J. T. Walker, forwarding a letter from Mr. Mulheran on the crosses and Cromlechs of Chindwara district. The reading of these papers was deferred until the next monthly meeting.

The receipt of the following communications was announced.

1. Notes on rare and little known Malayan Birds by Dr. A. C. Maingay.

2. Contributions towards a Persian Lexicography, by H. Blochmann, Esq.

3. On Solar Eclipses and the total Eclipse, August 18th, 1868. By Major F. Tennant.

The chairman stated that this paper, being of great present interest, had been, by order of Council, sent to press for immediate printing.

The following paper, postponed from the last meeting, was read by the author.

Notes on Elephants, by LIEUT. JOHNSTONE, *Supdt. Kheddass, Cuttack Tributary Mehals.*

The Indian Elephant is usually supposed to be one species, differing slightly in external appearance according to the locality in which it is found.

Elephants are found in Chittagong, Burmah, Sylhet, Assam, Bhootan, Nepaul, Cuttack, Chota-Nagpore, Central Provinces, Mysore and Dehra Dhoon. Of all these places Chittagong, Jynteea and Mysore are said to produce the finest kind, and Assam the worst.

The “*Elephas Indicus*” has six true, and thirteen false ribs on either side; the “*Elephas Sumatranus*,” of Borneo, Sumatra and Ceylon has fourteen false ribs, the true ribs being the same in both species. I have found elephants in the Central Provinces of the latter description. Whether the Central Province elephant is to be considered a distinct species from “*Elephas Indicus*,” is a question to be decided by naturalists.

The African elephant differs from the Indian species in having much larger ears and a sloping forehead; both male and female have tusks, and the specimens I have seen more resemble the “*Mirga-band*,” or very light built Indian elephants, than any other. The teeth also differ from those of the Indian elephant.

In noticing the Central Province elephant, I omitted to state that in one prominent feature, it closely resembles the Ceylon elephant, viz. in the small proportion of tuskers to "macknás" (or male elephants without tusks). The habits of all elephants are the same, and all seem equally capable of being trained for the use of man.

An elephant arrives at maturity at from 25 to 30 years of age, and I am of opinion that in their wild state the average duration of life is about 80 to 100 years, though it is *extremely difficult* to ascertain this point, and I may mention that out of a herd of 30 or 40 elephants, it is not at all uncommon to find only one really old female.

The female elephant begins to breed at about 18 years of age, and goes on breeding for 40 or 50 years, giving birth to a young one about once in 5 years: this I have ascertained from careful observation.

The period of gestation varies from 18 to 24 months.

A large proportion of males never attain a large size, but are puny and stunted, though why, I cannot understand. Of those that do attain a large size, (say 1 in 10,) the smallest are always killed or turned out of the herd by the larger ones, and this of course tends to keep up the size of the breed.

It is a remarkable fact that a dead elephant is *never* found in the jungle, and therefore I believe that when about to die they retire to the most inaccessible parts of the forest.

A female elephant suckles her young till another is born. I have seen a young one of 12 years of age, sucking.

If a young one strays from its mother, and finds her again after two or three days, the old elephant will not own it, but drive it away.

Elephants copulate in *exactly* the same manner as horses, but very rarely in confinement, though I have known two or three instances. A male elephant, captured by me on January 7th of this year, covered a female while in the stockade.

In their wild state, elephants are excessively timid, and *very* rarely attack a man even in self-defence.

The average number of a herd of elephants is about 20 or 25, they have a female at their head, who leads the way; in the cold weather

three or four herds often join together ; and when a female is in heat, a male joins them, otherwise the males remain apart.

Often a large male is seen attended by three or four smaller ones.

Males, when with the herd, never help to defend the others from any outward attack, but are generally the first to run.

When rivers are dry, wild elephants often scoop out little pools in the sand in which the water remains ; this I have seen *myself*, and I have lately heard of elephants damming up a stream with boulders and sand, so as to keep a good supply of water for themselves.

It is a mistake shooting elephants to prevent their devastating the crops ; shooting only breaks up the herds and disperses them over a large space, thereby increasing the amount of damage done.

I may observe that though the elephants of the countries I have named, all possess distinctive features of their own, still in every country you find elephants of all kinds, thus, though the "Mirgá-band" is characteristic of Assam, nevertheless I have seen animals equal to the Jynteea kind caught in Upper Assam ; I have also lately seen a Kumaon elephant exactly resembling a Chittagong one. This remark does not, however, apply to the Central Provinces, as the elephants there are all of one kind, and seem to me totally distinct from those found in any other part of the Continent of India.

Midnapore, 12th March, 1868.

Mr. Ball said :—

"During the past season when engaged in a geological examination of the hilly country which separates Manbhoom from Dhalbhoom and Singhbhoom, I have frequently, on the tops of hills and in the depths of the jungles, met with traces of wild elephants. The period of the elephants' stay in that part of the country is altogether dependent on the rice crop ; and as this had been cut about a fortnight or three weeks before the time of my visit, I missed seeing the elephants themselves, but found that much might be learned of their habits from an examination of their tracks.

"The natives say that a herd of at least 30 individuals come up every year from the S. E. (Satbhoom) and, while the rice is available, spread themselves along the range of hills of which Dulma (3047 feet) is the culminating point. Thence they nightly make descents on the crops of the neighbouring villages, causing great loss to the

poor Santhal and Bhumij ryots. To prevent this loss as much as possible, watchers are set; and so soon as the elephants approach, the whole village get the alarm, and with shouting, drum-beating, and brandishing of torches, they manage to drive them off.

“ In some villages, I found that the ryots, in order to save any portion of their crops, had been obliged to cut the paddy while still green. There are many deserted villages from which the inhabitants have fled in fear for their lives; one of these, which I saw, had evidently become a favourite place of resort with the elephants; foot-prints and other traces of their recent presence being abundant even inside the crumbling walls of the houses.

“ Occasionally the elephants commence their depredations before sunset; close to Dulma I was told of five elephants appearing one day in the rice field at about 4 o'clock.

“ On most of the hills, the elephants have made paths with a gentle ascent; and the comparative ease with which, where these existed, I was enabled to do my work, made me frequently bless them and regard them, no matter what they might be to the ryots, as at least — benefactors.

“ During the day the elephants feed upon several jungle trees, which the principal, as far as I could detect from the debris, are following:—

<i>Branches and leaves.</i>		
<i>Ficus Indica</i>	Bar, B.	} not very common in Jungle.
<i>religiosa</i>	Pipal, B.	
<i>racemosa.</i>		
<i>Phœnix acaulis</i>	Jangly-khejur, B.	
<i>Bark only.</i>		
<i>Cochlospermum gossypium</i>	Gol-gol.	
<i>Shorea robusta</i>	Sál.	
<i>Bauhinia Vahlii</i>	Chehúr.	
<i>Butea superba</i>	Palás	
<i>Shoots and Roots.</i>		
<i>Bambusa stricta.</i>		

“ Large gol-gol trees may often be seen torn up by the roots, and with the greater part of their bark stripped off: it is the only part of the tree eaten by elephants. Sál trees from four to six inches in diameter

are frequently broken off sharp at about four feet from the ground. Large bamboos seem to be crushed between the teeth just as a mere amusement, in fact, as a groom might chew a straw.

"In examining the foot-prints at the river gháts and other places, I was much struck with the carelessness with which the wild elephants walk as compared with the domesticated animals ; the latter, as is well known, try every step on doubtful ground, and if there is danger, refuse to proceed : the former seem constantly to make false steps and even venture upon recently made tank bunds which, in several cases, I noticed had given way under their weight."

Dr. Stoliczka said—The most prominent distinctions between the African and the Indian elephant, besides the difference in the size of the ears, were the greater frontal roundness of the head and the easier slope from near the middle of the back in the former species. Lieutenant Johnstone had noticed in the Indian elephant the variation in the number of false ribs, and in the size of the ears, and it would be very interesting to notice how far the other distinctive characters were constant. There could be little doubt that several more or less constant variations among the Indian elephants may in time be traced out. And it would be very desirable further to notice how much these variations depend upon, or are caused by, local influences and conditions of climate—by food, &c., and whether these variations are hereditary. The form of the milk-teeth should also be very carefully noted, very few observations having been made in their direction.

Dr. Fayrer asked whether there was more than one species of elephants known in India, and whether any differences in the lamellæ of the molar teeth, such as were characteristic of the African elephant, had been observed.

Dr. Stoliczka said that so far as present observations went, Indian elephants have all been referred to one species, and pointed out the great difficulty which existed in making accurate observations on the teeth, after they had been much ground down by use. While the arrangement of the lamellæ will of course remain constant, variations may arise from different causes. Observations on the milk-teeth, would be much simpler and more to be depended upon. Several important distinctions have been traced out among fossil elephants by the study of these milk-teeth.

The President thought the Society would join him in thanking Lieutenant Johnstone for his brief and modest, but very suggestive notes. There were many, very many, points of interest, which few could have such opportunities of settling as Lieutenant Johnstone. The very question of the number of ribs in the Indian elephant had been open to discussion, and there were many other points of the highest interest which, he doubted not, the writer of these notes would now bear more fully in mind.

Lieutenant Johnstone would be very happy to aid to the best of his ability in carrying out any investigations concerning elephants. He would beg to suggest that some competent person would take up a question of very high importance,—he alluded to the diseases of elephants. He himself knew very little about it, while the oldest and best máhúts appeared to know even less. They were possessed of a number of empirical remedies handed down for generations, but many of which were grossly absurd. The roasted head of a dog was, for instance, considered specific in some cases. There were several attacks quite fatal to these animals, which, if properly studied, he felt convinced, could be brought under control.

In reply to a question from Mr. Atkinson, he said he never had met with a white elephant. Elephants frequently became partially light-coloured, or what was called white; he had seen one himself in Assam, which was quite piebald. This change of colour was brought on, he believed, by attacks of a kind of fever. Wild elephants never were so prettily varied in colour in this way about the trunk as those in captivity.

The President announced at the request of Colonel H. Yule, R. E. that he was engaged in the preparation of a commentary on Marco Polo; and would feel very grateful to any member who would favour him with notices tending to illustrate the localities visited by Marco Polo, or the subjects noticed by him.

Mr. Waldie gave notice that he would, at the next meeting, move the following alteration in Rule 51 of the Bye-laws.

That "the general meeting of December," be substituted for "the day of election," and that the following be inserted at the end of

the Rule: "These balloting lists shall be laid before the members at the December meeting."

LIBRARY.

The following additions were made to the Library since the meeting held in April last.

Presentations.

. *Names of Donors in Capitals.*

List of Bengali and Sanscrit books and pamphlets &c. published at Native Presses in Calcutta in 1865.—THE REV. J. LONG.

Popular Bengali Proverbs by the Rev. J. Long.—THE AUTHOR.

Russian Proverbs illustrative of Social condition of Peasants and Women in Russia.—THE REV. J. LONG.

The Prevalence of Organic Disease of the Spleen as a test for detecting malarious localities in hot climates, being a report of a Committee assembled by General Order of the Commander-in-Chief, dated the 16th September, 1854.—THE GOVERNMENT OF INDIA, FOREIGN DEPARTMENT.

Selections from the Records of the Government of India, Foreign Department, Nos. LVIII and LIX.—THE GOVERNMENT OF INDIA, FOREIGN DEPARTMENT.

Geological Report on Londonderry and Parts of Tyrone and Fermanagh by Capt. J. E. Portlock, R. E., F. R. S., F. G. S.—THE ROYAL SCHOOL OF MINES.

Memoirs of the Geological Survey of India, Palæontologia Indica, Vol. V. part 5.—THE GEOLOGICAL SURVEY OF INDIA.

Vocabulary of Dialects spoken by Aboriginal Natives of Australia.—J. S. CARLILE, ESQ. MELBOURNE.

Statistiques des Mines et des Mineraux, par R. Brough Smyth.—J. S. CARLILE, ESQ. MELBOURNE.

A memorial of the Victorian Exhibition 1866, consisting of a verse from the Holy Writ in above one hundred languages.—J. S. CARLILE, ESQ. MELBOURNE.

Bulletin de la Société de Géographie, January 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Report on Cattle diseases, by K. McLeod, Esq.—THE GOVERNMENT OF BENGAL.

Catalogue of Pathological preparations in the Museum of the Medical College, by Dr. J. Ewart.—THE AUTHOR.

The Rock-cut Temples of Ajanta, by J. Burgess, Esq.—THE AUTHOR.

Hyāti Afgháni, by Hyát Khán.—THE GOVERNMENT OF PANJAB.

Les Squelettes de Cétacés et les Musées qui les renferment.—THE AUTHOR.

Proceedings of the Royal Geographical Society, Vol. XII. No. 1. THE ROYAL GEOGRAPHICAL SOCIETY.

Proceedings of the Royal Society, No. 98.—THE ROYAL SOCIETY.

Sitzungsberichte der Königl-bayer. Akademie der Wissenschaft zu München; Jahrgang, 1867. Band I.—K. A. DER WISSENSCHAFTEN ZU MÜNCHEN.

Chart of the World, by H. Berghaus und F. v. Stülpnagel.—THE AUTHORS.

The Calcutta Journal of Medicine No. 3.—THE EDITOR.

Purchase.

Revue des Deux Mondes, 1st February to 1st March, 1868.

Jacut's Geographisches Wörterbuch aus den handschriften zu Berlin, St. Petersburg, Paris, London und Oxford auf Kosten der Deutschen Morgenländischen Gesellschaft, herausgegeben von Ferdinand Wüsterfeld. Zweiter band, Bog. 1—121.

The Indian Medical Gazette, Vol. III. No. 4.

Revue et Magasin de Zoologie, 1868, No. 1.

Revue Archéologique, 1868, No. 2.

Revue de Linguistique, Tome I. fasc. 2.

The Annals and Magazine of Natural History, 1868, Nos. 2, 3.

The Ibis, 1868, No. 1.

The Numismatic Chronicle, 1867, part 4.

Journal des Savants, 1868, Jan., Févr.

Reeve's Conchologia Iconica, parts 268, 269.

Comptes Rendus, 1868, 1 to 7.

Gould's Birds of Australia, Supplement, Part IV.

Pratna-Kamra-Nandiní, No. 8, 1868.

Fauche's Mahábhárata, Vol. VIII.

Wörterbuch der Indogermanischen Grundsprache in ihrem Bestande vor der Völkertrennung. Ein Sprachgeschichtlicher Versuch von F. C. August Fick.

Nilsson on the Stone Age.

Beitraege zur Baktrischen Lexikographie von Paul de Lagarde.

Darwin's Animals and Plants under Domestication, 2 Vols.

Falconer's Palæontological Memoirs, Vols. 1, 2.

Aubaret's Grammaire Annamite.

Vullers' Supplementum Lexici Persico-Latini.

Gorresio's Uttarakānda.

Schlegel and Pollen's Recherches sur la Faune de Madagascar.
2e Livn.

The American Journal of Science and Arts, Nos. 127 to 133.

Beddome's Ferns of British India, part XIX.

Exchange.

The Athenæum, January, 1868.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JUNE, 1868.

Pursuant to notice from the Council, a Special General Meeting of the Society was held on Wednesday the 3rd of June, 1868, at 9 o'clock, P. M.

The President in the chair.

The Chairman explained the reasons for which the special Meeting had been convened, and reported on the part of the Council that circulars for collecting votes for the alteration of Bye Laws Nos. 13, 43 and 64, had been sent to 119 non-resident members and 56 replies have been received. Of these one votes against the change in Rule 43, one votes against the change in rule 64; and one declines to vote, not having a copy of the Bye Laws.—The rest are all in favour of the changes proposed.

As the several propositions had already been discussed in the Society, and were only now brought forward for confirmation or rejection, according to the result of the voting of the non-resident members, he would read the proposals seriatim, and put them separately.

The first was—That in Rule 13 the words, “nor shall his name be entered on the member roll” be inserted after the “words entitled to vote.”

This was put to the meeting and carried, more than three-fourths of the votes taken being in favour of the alteration.

Secondly.—That the following words be added at the end of Rule 43, “two months from the date of issuing the voting papers being allowed for that purpose.”

This was put to the meeting and carried.

Thirdly.—That the following words be added at the end of Rule 64—“ But no case which involves a change of the rules of the Society, shall be declared urgent under this rule.”

This was also declared to be carried.

The Special Meeting was then dissolved.

A Monthly General Meeting of the Society, was then held.

The President, in the chair.

The Minutes of the Special Meeting of the 6th May, 1868, were then read,—when it was proposed by Mr. H. F. Blanford and seconded by Mr. H. Locke, “ That the Minutes of the Special Meeting of the 6th May, being incorrect in many particulars, be referred to the Council for revision and correction, and re-submission to the Society.”

A show of hands being called for, this motion was declared lost. Mr. Blanford then demanded a scrutiny and this being held, the motion was again declared to be lost.

It was then proposed by C. D. Field, Esq., and seconded by Colonel J. E. Gastrell, “ That in accordance with the spirit of Rule 60, any inaccuracy of which the present meeting are satisfied, be now corrected.”

This was put to the Meeting and carried.

The President then read the Minutes again in detail, when the following corrections were agreed to,

Page 123, line 12,* insert the words, ‘ Senior Vice-President’ after the Hon’ble J. B. Phear.

Page 124, line 9,—omit the paragraph commencing, ‘ A question and terminating with, ‘ to be seconded.’

Page 125, line 17, substitute Mr. Scott, for Dr. Waldie.

„ 25, *for*, This was seconded by Dr. Colles, and was put to the meeting, *read*— This was put to the meeting

„ 27, omit the words, “ in consequence of this resolution

These alterations having been agreed to seriatim, the minutes were then confirmed, with these corrections.

The minutes of the last Ordinary General Meeting were then read and confirmed.

* These numbers refer to the printed copy of the Proceedings already circulated to the members.

I. The following presentations were announced :—

1. From the Commissioner of the Central Provinces,

Two Copies of Report of the Ethnological Committee on papers laid before them and upon examination of specimens of Aboriginal tribes brought to the Jubbulpore Exhibition of 1866-67.

2. From Dr. F. Steindachner through Dr. F. Stoliczka, a copy of "Ichthyologischer Bericht über eine nach Spanien und Portugal unternommene Reise."

3. From Colonel W. H. Sykes, a copy of Analysis of the Report upon the state of the Empire of France presented to the Senate and Legislative body, February, 1867.

4. From Major J. F. Tennant, a copy of a Memorandum on preparations for observing the Total Eclipse of the Sun on August 18th, 1868.

II. The following gentlemen duly proposed and seconded at the last meeting were ballotted for and elected as ordinary members :—

E. Buck, Esq., C. S., Cawnpore.

Bábu Yatíndramohana Thákura.

H. Reinhold, Esq.

Dr. C. R. Francis (re-election.)

III. The following are candidates for ballot at the July meeting :—

Dr. G. W. Leitner, proposed by Mr. Grote and seconded by Mr. Blanford.

Lieutenant C. F. T. Marshall, Lahore, proposed by Mr. Grote and seconded by Bábu Rájendralála Mitra.

W. Smith, Esq., C. E., proposed by Dr. T. Oldham and seconded by Mr. H. Leonard.

R. H. Renny, Esq., Assistant Commissioner, Chittagong Hill Tracts, proposed by Captain T. H. Lewin, seconded by Babu R. Mitra.

The Rev. James Roberts, Jr. Chaplain of the Church of Scotland, proposed by Mr. Sime, seconded by Mr. H. F. Blanford.

IV. Letters from the following, intimating their desire to withdraw from the Society, were recorded :—

Captain F. S. Staunton, R. E.

J. H. Branson, Esq.

A. P. Macdonell, Esq.

V. Mr. D. Waldie, brought forward the following motion, notice of which was given at the last meeting :—

“ That Rule 51 be made to read as follows :—The Council for the time being shall before the *General Meeting of December*, cause to be prepared a sufficient number of printed balloting lists, according to the form in the appendix, which shall contain the names of those persons whom they recommend to be appointed members of Council and office-bearers for the year ensuing, with blank columns in which to place other names. These balloting lists *shall be laid before the members at the December Meeting.*”

Mr. Waldie said—The change consisted, as would readily be seen in simply providing that the balloting lists should be laid before the members at the monthly meeting in December preceding the annual meeting in January, instead of on the evening of election itself. The apparent object of the rules was that the Council should recommend who should constitute the Council and Office-bearers for the ensuing year, but that the Society at their meeting should elect whom they thought fit, and all that was proposed was that the means should be adapted to carrying this into effect. He (Mr. W.) did not think that the means hitherto employed, so far as he had seen were adapted to secure this. The Society had no previous knowledge of the names of those who were to be proposed for the new Council; these were submitted to the members at the meeting with, no doubt, the power to alter them, but they had no opportunity of exchanging opinions as to any desirable alteration; and though occasional alterations were made, from the absence of any power of consultation or combination there was the smallest probable chance of any of them being effectual, and as a matter of fact practically the old Council elected the new one. So far as he was himself concerned, he had hitherto felt not the slightest objection to it, as on all occasions he had approved of the lists in their entirety, but he could easily conceive that he might on some future occasion wish to insert some name or names that were not in the Council's list, and probably other members might wish the same: indeed, the alterations occasionally made shewed that such was the case. Beside, it ought to be remembered that silence was not always satisfaction: not very long ago a member had expressed dissatisfaction with the small attention paid

to the opinion of the mofussil members, and an alteration had been made in the rules in consequence.

If the proposal was adopted, it would be necessary to alter Law 85, so as to be in accordance with it. It might also be worthy of consideration whether Law 47 might not be modified.

Mr. W. farther observed that, though not much acquainted with the working of such Societies, he knew of at least one scientific Society in London which sent the balloting lists by post to their country members. If such a change as this was contemplated, some other rules might require attention, such as 32 and 33. But he merely threw out this as a suggestion for the consideration of the Council.

The motion was referred to the Council for report.

VI. The Council reported that on a recommendation of the Finance and the Philological Committees, they have allotted Rs. 3,000 to the publication of an English Translation of the *Ain-i-Akbari*, by Mr. Blochmann, in the *Bibliotheca Indica*.

Also, that they have elected F. Stoliczka, Esq., Ph. D. a member of their body and Natural History Secretary in place of Dr. J. A. P. Colles, who has resigned both his seat in the Council and his Nat. Hist. Secretary-ship, as he is leaving Calcutta; subject to the confirmation of the Society at the monthly meeting of July.

Also, that they have agreed to receive and take charge of the instruments formerly used by Col. Lambton in the early operations of the Great Trigonometrical Survey, proposed by the Officiating Surveyor General to be deposited in the Society's rooms.

The President brought to the notice of the Society that H. F. Blanford, Esq., having resigned his Secretary-ship of the Society at the last Special General Meeting, he had requested Babu Rájendralála Mitra to carry on the current duties, for the present.

VII. The President then explained to the Meeting that subsequently to the meeting of the Council, Maulavi Abdul Latif Khan Bahadur had called on him, and explained to him that there were at present in Calcutta for a short time several of the Mussulman inhabitants of Yunan, the Panthays; that one of these appeared a man of some learning from whom he had obtained a brief history of the race in Arabic, which he had translated, and which he was very desirous of laying before the Society, while these Panthay gentlemen were here

and could attend, and afford any further information that might be sought. As these gentlemen could not be present at the next Ordinary Meeting, he had, as authorized by the rules of the Society, added the Maulavi's paper to the list for this evening, but as they had already been sitting for some time, he would ask the meeting to allow this paper to be read before the others.

This was agreed to.

Maulavi Abdul Latif then read "*Notes on an Arabic history of the PANTHAYS, with translation,*" as follows.

From the earliest times China has excited the keenest curiosity of the outer world. Its undoubted antiquity, its wealth, the vastness of its population, its arts and civilization, its social peculiarities, above all its jealousy of the stranger, attracted to it travellers from the most distant countries; and the accounts which they published, meagre and unsatisfactory as they necessarily were, were still of a character to keep up the interest in the strange land. The events of late years, and the anticipations of a no distant future, have given our interest in Western and Central Asia, a more direct and even personal character. Our knowledge, however, of the regions has not proportionately increased. It is fortunate that the ardour of our scientific men, our desire to find new outlets for commerce, and our increased political circumspection, are at work to supply the want. We have recently sent an expedition with commercial and scientific objects to explore the overland route to China, and are anxiously awaiting the issue. Not long ago, the world was startled by the chance intelligence that there was a numerous Mahomedan population living for centuries in China, and that for some reason or other they had thrown off the Chinese yoke. Great curiosity was awakened by the information, but beyond the half authenticated original rumour, there were no adequate means of satisfying this curiosity.

Colonel A. Fytche, the Chief Commissioner of British Burmah who gave, at our December meeting, almost the first account of these interesting China Mussulmans, dwelt much on the extreme difficulty of obtaining any information regarding them, and gave abundant warning for receiving his account with considerable allowance. Happily, a few months after, arrived at Calcutta, by way of Burmah on their way to Mecca, a dozen pilgrims from among these Chin

Mahomedans. Some information of their country, more especially in regard to routes, obtained after much difficulty of communication with them, has already been published in the 'Daily News' paper of the 25th ultimo. I am happy to be able to add some more to the stock, and to introduce a couple of our distant and interesting visitors to this meeting, for ocular observation and personal enquiry as to any facts. From what I could learn, Arabic learning, as befits a Mahomedan country, flourishes well in Mussulman China, much encouragement being given to its cultivation, by means of numerous colleges, and by rewards to learned men for studying the mass of Arabic literature, which has found its way there.

One of our visitors, named *Syud Abdool Wudood*, appears to be a learned man, and as he is not at all disinclined to impart information, his presence in Calcutta, would have been really valuable, had it not been for his almost unintelligible pronunciation of Arabic. He writes, however, Arabic fluently and well, and he has in his possession an account in Arabic of the Mahomedans in China, giving a brief narrative of the political events that have taken place in Yunnan during the last thirteen years. It is not such an account as will satisfy all the demands of European enquiry, but for an oriental document, it is singularly clear. What gaps there are may be filled up by fresh questioning. I have made a copy of the account, which I beg to present to the Society, and I will now read a translation of it.

'In the year 1254 Hegira (1839 of the Christian era) a disturbance took place in a district of the Province of Yunnan; the particulars of which are, that the Infidels burnt down several villages of the Mahomedans to ashes and massacred their inhabitants, killing Mahomedans, men and women, to the number of 2000 or more. The survivors preferred their complaints before the higher local authorities, but no one paid even the slightest attention to them, and on the contrary they charged these very persons with being blameable and guilty. They then repaired to Peking, and laid their grievances before His Majesty the Emperor of China—who deputed one of the higher Officers of the Court to Yunnan, in order to do justice. When this Officer arrived there, he perverted the royal commands, and proceeded to act just as he was instructed by his prede-

cessors,—insomuch that he compelled the Mahomedans to sell off their lands, houses and cultivations, to the Infidels at low prices. After this, the oppression of the Infidels towards the Mahomedans by word and deed increased considerably, and in some districts the old animosity gradually revived and quarrels arose. When the Infidels had the better of the Mahomedans in the fight, the authorities became dumb and blind; but when the Mahomedans defeated the Infidels, the Officials espoused the cause of the Infidels. For some years, matters continued thus.'

'In 1271 Hegira (1854 of the Christian era) a hard struggle ensued throughout Yunnan. It arose thus:—The Infidel Officials gave secret orders to all their co-religionists to combine, and on a certain appointed day, to put all the Mahomedans to the sword; the reason for secrecy being, that the Mahomedans might not be warned to combine in self-defence. The infidels made their party strong and firm; and concocted schemes of fraud and treachery, and signs of evil began to manifest themselves. When we Mahomedans saw such a state of things, and compared our numerical weakness with the vast number of the Infidels, we were overwhelmed with grief and anxiety. We regarded the fact, as a plague without remedy, a danger from which there was no escape; and we thought that there was no refuge but in God, and that we had no means left, save to implore the mercy of God, and pray for aid from Him. We then recited the holy text: "O God! Thou art our Lord, grant us victory over the nation of infidels."'

'Some of the Infidels prematurely betrayed their plot by their eagerness, for without waiting for the appointed day, they began in some of the districts, to raise discord and contention. The Mahomedans of those parts of the Province sought help from their brethren of the entire Province. They all united together and assisted one another. We, the followers of Islam, moved in large bodies from one place to another, and commenced patiently attacking the Infidels. We willingly placed ourselves in the most imminent dangers, repeating the holy sentence: "O God! give us all patience and firmness, and fix our feet, and help us to defeat this nation of infidels."'

'After all those distresses, God granted us victory and ease. We killed some of the Infidel officials in battle. Villagers fell without

number, mostly in battle, and others in the streets, while many were burnt and drowned. Such as escaped the wholesale massacre, leaving their families to their fate, fled to other places, and there settled themselves. Some of the Infidels of certain districts, finding their own party dispersed, and their string of union broken, were compelled to surrender, and made submission. We granted their prayer. Some of these refugees even followed us in battle and joined us in destroying the enemies. The remaining chiefs having collected a large number of Infidels from different districts and cities, managed their affairs and guarded the different posts as strongly as possible. After this many hard battles were fought between ourselves and the Infidels. The current of bloodshed was moving to and fro; and disturbances spread throughout the Province from east to west. The country near and far was ruined and destroyed. In some battles, we sustained manifest defeats and routs, and in others we were crowned with victory and delight. We captured immense booty, and lofty edifices came into our possession. Thus we alternately shared defeat and victory, until by the grace of God, and our numberless victories, we took possession of large cities and many palaces and buildings. And God made the Infidel inhabitants to be our subjects and dependents, all of them submitting to the decree of fate. At the instigation of the Officials, the enemies again raised tumults from their own houses. For instance, up to the present time, we go on warring with them, and peace has not yet been restored, and the fire of discord still burns.'

'As for our Province of Yunnan, it has been divided into two parts. The eastern Division is called *Eedon*. Its capital city is *Sinchan*. Here the Mahomedans have for their chief, a man of the name of *Myan-foon*. Of the inhabitants of the last, some are Mahomedans and some Infidels; but the latter pay allegiance to the Mahomedans.'

'The other part of the Province lies on the west. Its name is *Isee*, and its capital city *Tuli*. Here, also the Mahomedans have elected a chief, whose name is *Soleiman Ibn-i-Abloor Ruhman*, who has established Islamism, by building mosques and schools and colleges, and assisting and honouring learned men. The inhabitants of the west are mostly Mahomedans, and few Infidels, but they are dependents of the Mahomedans. He has appointed several Officers

Report by the Commissioner of Coorg on the Cromlechs of that Province.

Mr. Mulheran writes,—I have just received your letter of the 17th ultimo, and hasten to mention that Colonel Thuillier wrote to me upon the same subject, and that I at once replied to his letter and forwarded the photographs referred to by Mr. Bayley. I also furnished such information as it was in my power to afford, but avoided the question raised at home by Mr. Marcus Keane, M. R. I. A., regarding the whole of these ancient remains, *crosses included*, being Bhuddist in origin. As regards the Cromlechs themselves, I believe Mr. Keane to be perfectly correct, the majority of the massive stone temples and other ancient structures found within a radius of 200 miles of the crosses, being similar to the Bhuddist Thakurdwaras of the snowy range, as regards the extreme grossness of the subjects represented. As regards the crosses being also Bhuddist in origin, Mr. Keane must be mistaken, as no instance can be cited either in India or at home, or indeed in any part of the world of a memorial cross ever having been erected, except as a symbol of the Christian faith. Apart from this, the whole of the Katapur crosses, as you will see from the enclosed photographs, are of the Latin form.*

As regards the people by whom these crosses were erected, the question is one of great difficulty, the people, living in the vicinity, being utterly ignorant of the symbol itself, and incapable of affording even traditionary information. From what I have myself seen of the neighbourhood of Katapur and the open glades in the forest to the west, I have not the slightest doubt that, at some former period, the whole of these cleared portions of the forest were extensively cultivated by Teligus, or some other race far more civilized than the present race of Gonds. Indeed, the large tank a few miles west of Katapur, which irrigates extensive fields of rice, is one proof of this, as are also other large tanks east, west, and north of Katapur, the skill and labour evinced in which would do credit to Engineers of the present day. If, therefore, it can be shown that there are reasons for believing that a considerable portion of the country now overrun with forest, was formerly cultivated by a race differing from the Gonds, and that the massive stone temples in all stages of decay were erected by them, then

* See Proc. April, 1868, p. 116.

for 13 years in *Shans*, has now returned home. Between our country (*Yunnan*) and *Shans*, the distance is that of 70 stages.

'A large number of the Christians of France and England have come to China and to Peking, and to all the Provinces, and some of them have reached the Capital of the the Eastern Division of Yunnan. There they have erected churches and hung up therein the likenesses of Jesus Christ, the son of Mary. They have done likewise in many other Provinces too.'

Maulavi Abdul Lutif begged also to present to the Society a manuscript sheet written in Arabic by the said *Syud Abdool Wadood* of Yunnan, which he had the goodness to present to him. The archaic peculiarity of the caligraphy will, he believed, be remarked.

Several members having made different enquiries regarding the *Panthay* country from the *Panthay* gentlemen who were present, by the aid of Maulavi Abdul Latif; thanks were passed to the Maulavi for this interesting account.

Mr. Blanford said that the Society would doubtless be interested to know that information had that day been received from Dr. John Anderson on the Yunan expedition. The expedition had met with many obstructions to its progress, and had consequently experienced much delay, but at the date of Dr. Anderson's letter (28th April) all serious obstacles appeared to have been overcome, and the *Panthays*, who appeared to be most anxious to receive the expedition, had just cleared away one of a formidable character by defeating and driving away from Mawpoo the Chinese robber chief Leeseetai who is stated to have commanded a body of 5000 men, and to have been instigated by certain of the Chinese to destroy the expeditionary party. The road was therefore open to Momein, and the *Panthays* have sent circular notices to the chiefs on the road to give the expedition every assistance in their power. Dr. Anderson's letter had been brought by Captain Williams and Mr. Stewart who had returned to Mandalay. Dr. Anderson expected to be back in Calcutta about August.

The following papers, reading of which was postponed at the last Meeting, were read by the President:—

Notes on the Crosses and Cromlechs of Chindwara District, by J. Mulheran, Esq., in a letter to Col. J. T. Walker, R. E.

scattered over the Nizam's country. I have, therefore, no hesitation in expressing my belief that the whole of these temples are Bhuddist in origin, although some have been converted into mosques, and others into Hindoo temples. The one converted into a mosque at Dowlatabad has a large black slab covered with characters in *Pelvi*, in excellent preservation, buried in the wall which, if translated, would, no doubt throw some light upon a subject that at present is doubtful.

I enclose a few photographs to afford an idea of some of the stone temples to which I refer. Also photographs of the ruins of two monasteries near Súnár and Maiker. A larger camera, with good definition, would have given a clearer idea of these massive structures, as well as the peculiarities of the carvings in stone of the principal figures.

As regards the crosses found at Katapur, there can be no doubt that they are more puzzling than the Cromlechs themselves. In noticing them, however, I may observe that, as the Godavery below Badrachulam has always been navigable at certain seasons of the year for boats of a particular size, there has always been some communication with the sea coast. If, therefore, there be any foundation for the belief that St Thomas visited the Mount at Madras, it is reasonable to infer that either that apostle or some of his disciples visited the sea coast near Cocanada, and made converts to the Christian faith, either at that place or higher up the Godavery. If this could be shewn to be true, no difficulty would be experienced in explaining the origin of the crosses, however strangely situated, it being impossible to believe that heathens would now think of erecting massive stone crosses of the Latin form either as memorials of the dead, or of their own faith. That the converts, if any, were few in number and confined to one locality, may be inferred from the fact that although Cromlechs are found in great abundance on the ridges adjoining the Godavery, as well as upon the undulating land near Hyderabad, crosses of the form to which I have referred, are only found at Katapur and Malín, a few miles west of the Godavery. My own belief is that, if the crosses are not memorials of the faith of Bhuddist converts, they are memorials of the faith of Christian labourers of the early ages of Christianity or of the Roman Catholic Church at Goa, who died during their ministration on the banks of the Godavery.

The crosses, as you will see from the photographs enclosed,* are all of one piece of stone, and from 10 to 11 feet in length, and indicate as clearly as such laborious memorials can indicate, the strong faith of those who erected them.

The above, added to the remarks made in my letter to Col. Thuillier, embrace all the information it occurs to me to afford regarding the subject to which you refer. Should either you, however, or Mr. Bayley, consider more detailed information upon any particular question desirable, I will gladly furnish the same on hearing from you.

8th March, 1868.

Col. Walker in his note, says :— * * *

The fact that the crosses are only to be met with in one locality, while the Cromlechs are found in great abundance in several parts of the Hydrabad districts, as well as in other parts of India, *e. g.* Chunar, would seem to be fatal to the hypothesis that the crosses and Cromlechs 'belonged to the same people.' The proximity of the Cromlechs to the sites of extensive Bhuddist ruins, and their similarity to the Bhuddist Thakurdwaras of the snowy range, makes it probable that they are of Bhuddist origin. But the crosses may well be the relics of a small community of Christian converts and missionaries, whose annals have not been inscribed on any page of history; this is much more probable than that they can be of Bhuddist origin.

As for the hypothesis that the Cromlechs are the work of 'a stone implement using race,' I confess to feeling very doubtful as to whether such implements could have sufficed for the construction of such works. * * *

Dehra Doon, 30th March, 1868.

On the Cromlechs in Coorg. Sir R. Temple, Foreign Secretary to Government of India under date 9th April, forwards this correspondence by direction of His Excellency the Governor-General in Council, accompanied by three drawings and some lithographs of the remains. The letter from the Superintendent of Coorg, Capt. R. A. Cole, dated Merkara, 10th March 1868, says.

I have the honor to report the discovery of a large number of

* See Plate 1, fig. 1. p. 116.

Cromlechs or Cairns on some *bané* or grass lands about a mile to the west of the town of Veerajpett in South Coorg. The discovery was made by my Assistant, Lieutenant J. S. F. Mackenzie, in January last, in the following manner :—A quantity of stones was required for certain bridges and other works in Veerajenderpett, and one of the native merchants offered to get the stones if Mr. Mackenzie would allow him to remove them from the *bané* in question: Mr. Mackenzie inspected the locality and found the remains of a great number of Cromlechs, the stones of which had evidently been split up and removed at different periods by the Wuddars, a tribe of stone-hewers. The *bané* in question is much grown over with low brush wood; and on pushing further on, Mr. Mackenzie hit upon a fine large double Cromlech. On communicating this most interesting archæological discovery to me, I at once forbade the removal of any more stones from the locality, and directed the shrubwood and earth around the Cromlech to be removed, so as to lay bare the whole structure to its base.

Lientenant W. Freeth, the Assistant Superintendent of the Revenue Survey, then kindly undertook to make drawings and plans of this double Cromlech and of two others, and I have now the pleasure of forwarding, for submission to His Excellency the Viceroy and Governor-General of India, three colored drawings* of these Cromlechs, as also 20 copies of plans of the same lithographed at the Merkara Sudder Jail Press from drawings by Mr. Freeth.

The double Cromlech, (Plate 2.) is formed by six large (unhewn) stones, surmounted by one large flat stone, 13 feet long, by 9 feet 9 inches broad, and about 7 or 8 inches thick. This top stone had been apparently not long ago chiselled and split open right across the centre from each side, so as to form four blocks, but most fortunately had not been removed, except a small piece at the back and to the left, looking at the Cromlechs. The back is also formed by one large slab, as also each side. The front slabs are smaller and divided by the large centre slab, which forms the enclosure into two compartments. These front stones have each a peculiar aperture of an irregular segmental form, about 1 foot 11 inches by 1 foot 8 inches, at the top and immediately below the superincumbent stone. The stones at these apertures are sharp on the inside, and present a bevilled appearance

* We have given a reduced copy of the most important of these. ED.



CROM LECH NEAR VIRAJENDERPETT
COORG.

Photographed at the Surveyor General's Office, Calcutta.
June 1888.

outside. The inner rim is so sharp as to lead to the conclusion that these apertures could not have been used for ingress and egress. The centre stone projects to the front 2 feet 8 inches, and the top flag projects over the left compartment to such an extent as to afford shelter like a verandah. This was doubtless accidental, but it is a curious fact that this shelter is so afforded on the side, away from exposure to the monsoons which now prevail. The interior measurements of the compartments are also given in the plans by which it will be seen that each compartment was about 7 feet long, 3 feet 9 inches broad, and 4 feet high. Each compartment was flagged by a large stone in each. These compartments were nearly full of earth, but nothing was found in them. Dr. Shortt of Madras, who has opened many cairns on the Nilgiris and other parts of the Madras Presidency, informed me that he had never seen or heard of a double Cromlech of this description. This would add to the value of the present discovery.

There is also a single Cromlech similarly constructed of large unhewn and uncemented slabs of granite. It is 6 feet 8 inches long, by $4\frac{1}{2}$ feet broad, and 4 feet high, interior measurement. The top stone had been broken and partly removed, and the stem of a very old tree was found growing out of it; nothing was found in this either.

A third one is a still smaller Cromlech found on another *bané* about $1\frac{1}{2}$ mile from the others. On this *bané* are to be found many large tumuli, which apparently contain many of these Cromlechs. The front stone of this small Cromlech was just visible at the end of one of these tumuli, and I caused the earth above and around it to be cleared away, and the top stone was raised and made to slip over on one side. It was full of earth in which we found pieces of earthen pots and small pieces of charcoal.

At the end of another tumulus, another Cromlech was dug out, but we found the top stone had been removed, apparently very many years ago. In this also were found fragments of earthen vessels and pieces of charcoal, and also a small piece of a bangle. This bangle is much thicker than those in use in the present day, and the devices on it are in pale yellow and somewhat similar in form to those generally to be found on the modern imitation Etruscan vases, goglets, &c. I showed this bangle to all the native merchants at Veerajpett, who

declared that they had never seen one of such a description before. This bangle and fragments of earthen vessels were sent in to the Commissioner, and are now in the museum at Bangalore, but I would beg to suggest that they should be sent on to the Government with this report. The bangle is evidently of no modern date; but as the top stone of this Cromlech had been removed, and Wuddars had evidently been at work in the locality during the past 50 to 100 years, it is possible that the bangle had once belonged to some dusky beauty of that tribe. It was found also only about a foot and a half below the surface of the mound and just within the stone cist.

I have failed to discover any of those concentric rows of upright stones which have generally been found with such Cromlechs in cairns elsewhere, but the fact of the Wuddars having been so long at work in these localities would account for the disappearance of these stones which were probably first discovered and removed. It is worthy of note that these structures all face east and west. Very few of the Cromlechs would appear to have had the segmental apertures found in the double Cromlech, and in fact most of those now visible are much smaller and would appear to be more like those short stone cists containing cinerary urns, which have generally been found in the sepulchral mounds both in Asia and in Europe, and even in Central America. As remarked before by me, these *banés* abound with such tumuli, some of which have evidently not been touched. It is such alone that we may expect to find still more interesting relics of this almost unknown past period of the history of the world and our species, and I would earnestly request permission to push on the excavations. Some of these tumuli would appear to run parallel with each other, so that, when uncovered, these stone chambers would present the appearance of streets. The discovery of pieces of charcoal and fragments of apparently cinerary urns, would tend to show that the conclusions drawn by modern archæologists were correct, *viz.* that these stone chambers were only used as sepulchral monuments. By my assistant, Mr. Mackenzie, has suggested that it is an extraordinary fact that, when such durable and lasting monuments to the dead are to be found, no remains of the dwellings of these ancient Dravidian races are visible in the same localities so as to throw still greater light on the ethnical records of the past. Is it possible that these larger

Cromlechs forming regular well-closed chambers, unlike those found elsewhere, were the dwellings, and the smaller stone cists and tumuli the sepulchral monuments of these almost hypothetical races?

In conclusion I beg to state that similar Cromlechs and monoliths are said to exist in Kiggutnad in South Coorg, and also near Fraserpett in East Coorg, on the borders of Mysore, regarding which I would propose to submit a separate report hereafter. Soliciting the Commissioner's sanction to an expenditure of 2 or 300 Rs. in making further excavations, I have &c.

The correspondence was closed by a letter from Sir R. Temple, Foreign Secretary to Government of India, to the Commissioner of Coorg, dated 9th April, stating :—

I am directed by the Governor-General in Council to acknowledge the receipt of your letter dated 11th ultimo, No. 59, with an enclosure from the Superintendent of Coorg, reporting the discovery by Lieutenant J. S. F. Mackenzie of a number of Cromlechs or sepulchral monuments in the vicinity of Veerajpett, in South Coorg, and forwarding three drawings executed by Lieutenant W. Freeth, of a large double Cromlech and two single ones of a smaller size, together with lithographed copies and plans.

2. His Excellency in Council desires that the thanks of the Government of India may be conveyed to Captain R. A. Cole and to the officers who have assisted him, for the interesting information contained in his letter to your address, and for the drawings which accompanied it.

3. The Governor-General in Council requests that the necessary measures may be taken for the conservation of these archæological remains, and that memoirs may be prepared in accordance with the instructions laid down in the Circular of the 14th February last, issued by the Home Department.

4. As regards the proposal of Captain Cole to carry out further excavations, the Financial Department will be requested to place a sum of Rs. 300 at the disposal of that officer for the work in question.

The reading of the following was deferred till next Meeting :—

Letters from Mr. W. T. Blanford from Abyssinia.

On the Anatomy of *Sagartia Schilleriana* and *Membranipora Bengalensis*, by F. Stoliczka, Esq.

VIII. The receipt of the following communication was announced :

1. Continuation of correspondence regarding the two Andaman Islands under the charge of Captain T. C. Anderson.

The meeting then adjourned.

LIBRARY.

The following additions were made to the Library since the meeting held in April last.

Presentations.

**.* Names of Donors in Capitals.*

Bulletin de la Société de Géographie, Février, Mars, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Proceedings of the Royal Society of London, Vol. XVI. Nos. 99 100.—THE SOCIETY.

Proceedings of the Royal Institution of Great Britain, Vol. V. P. 1 2.—THE INSTITUTION.

Journal of the Statistical Society of London, Vol. XXX. P. 1.—THE SOCIETY.

Proceedings of the International Sanitary Conference, 1866.—THE GOVERNMENT OF BENGAL.

Mittheilungen der Kaiserlich-Königlichen Geographischen Gesellschaft, IX. Jahrgang 1865.—THE IMPERIAL GEOGRAPHICAL SOCIETY OF VIENNA.

Verhandlungen der Kaiserlich-Königlichen Geologischen Reichsanstalt, Jahrgang 1867, Nos. 1—18.—THE IMPERIAL GEOLOGICAL INSTITUTE, VIENNA.

Jahrbuch der Kaiserlich-Königlichen Geologischen Reichsanstalt 1867, Nos. 1-4.—THE IMPERIAL GEOLOGICAL INSTITUTE, VIENNA.

Die Fossilen Mollusken des Tertiär-Beckens von Wien, von Dr. Hörnes ; Band II., Nos. 7, 8.—THE IMPERIAL GEOLOGICAL INSTITUTE, VIENNA.

Selections from the Records of the Government of the Punjab. Public Works Department, No. 1.—THE GOVERNMENT OF PUNJAB.

The Progress Report of Forest Administration in the Province of Oudh, 1866-67, by F. Read, Esq.—THE GOVERNMENT OF THE N. PROVINCES.

Sitzungsberichte der Königl. Bayer. Akademie der Wissenschaften zu München 1867, I Heft IV.—I HEFT II:—K. BAYER. AKADEMIE DER WISSENSCHAFTEN ZU MÜNCHEN.

Progress Report of Forest Administration of Mysore, 1866-67.—THE GOVERNMENT OF INDIA.

Progress Report of Forest Administration in British Burmah, 1866-67, by H. Leeds, Esq.—THE GOVERNMENT OF INDIA.

The Journal of the Chemical Society, for January, February and March, 1868.—THE SOCIETY.

Verhandlungen der Kaiserlich-Königlichen Zoologisch botanischen Gesellschaft in Wien, 1855-1866.—ZOOLOG. BOTANICAL SOCIETY, VIENNA.

Nachträge zur Flora von Nieder-Oesterreich von Dr. A. Neilreich.—DITTO.

Contribuzione pella Fauna die Molluschi Dalmati per Spiridione Brussina.—DITTO.

Separatabdruck naturwissenschaftlicher Abhandlungen aus den Schriften des Zoologisch-botanischen Vereins in Wien.—DITTO.

Catalogus Systematicus Dipteriorum Europae, auctore R. J. Schiner, Dr.—DITTO.

Monographie der Oestriden von Friedrich Brauer.—DITTO.

Personen-Orts und Sach-Register der fünf ersten Jahrgänge (1851-1860) der Sitzungsberichte und Abhandlungen des Wiener zoologisch botanischen Vereines, zusammengestellt von A. Fr. Grafen Marschall.—DITTO.

Bericht über die österreichische literatur der Zoologie, Botanik und Palæontologie aus den Jahren 1850-1853.—DITTO.

Nachträge zu Maly's Enumeratio plantarum phanerogamicarum inferii austriaci universi von A. Neilreich.—DITTO.

Nouveau système des Blattaires par C. Brunner de Wattenwyl.—DITTO.

Purchases.

Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff-Urbair: Zoologischer Theil, Zweiter Band, *Anneliden*.

Comptes Rendus, Nos. 9, 10, 11 and 12.

Deutsches Wörterbuch von J. Grimm und W. Grimm, Band V. Lief 8.

Revue de Zoologie, No. 2, 1868.

The Annals and magazine of Natural History, No. 4, 1868.

Die Preussische Expedition nach Ost-Asien nach amtlichen Quellen, Botanischer Theil, *Die Tange*.

Die Preussische Expedition nach Ost—Asiennach amtlichen Quellen, Zoologische Abtheilung; Erster Band, Zweiter Band, Erste Hälfte.

Reisen und Forschungen im Amur-Lande in den Jahren 1854-1856 im Auftrage der Kaiserl. Akademie der Wissenschaften zu St. Petersburg, ausgeführt und in Verbindung mit mehreren Gelehrten herausgegeben von Dr. Leopold V. Schrenck. Zweiter Band, 3, Lieferung.

Anecdota Syriaca. 2 Vols.

The Westminster Review, No. LXVI. April 1868.

The Quarterly Journal of Science, No. XVIII. April, 1868.

Revue des deux Mondes, 15th March, and 1st April, 1868.

Hewitson's Exotic Butterflies, P. 66, 1868.

Böhtlingk und Roth's Sanscrit Wörterbuch, 5 Theil.

Journal des Savants, March 1868.

Revue Archéologique, Tome XVII., No. III.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JULY, 1868.

A meeting of the Society was held on Wednesday, the 1st instant, at 9 o'clock P. M.

The President, in the chair.

The minutes of the last Ordinary General Meeting were read and confirmed.

Mr. Blanford wished to ask by what authority the last numbers of the Proceedings had been issued, and in reply the President observed, the proper course would be for Mr. Blanford to give notice of motion, when the time for such notices arrived.

The following presentations received since the last meeting were laid on the table :—

1. From the author, a copy of "The Alps and the Himálayas,—a Geological comparison;" by H. B. Medlicott, Esq.

2. From the Superintendent, Barrackpore Park, a specimen of a young tiger.

3. From the Rev. J. Long, a copy of "The Calcutta Gazette or Oriental Advertiser," for 1785, 1786, 1789 and 1790.

A copy of "Samáchára Darpana," 1824, Vol. VIII.

A copy of "Collection of 50 prints from the Antique gems in the collections of the Right Hon'ble Earl Percy, Hon'ble C. F. Greville and T. M. Slade, Esq."

A copy of "Calendar of Indian State Papers," Secret Series, Fort William, 1774-75, and four other pamphlets.

4. From Muhammad Hyát through Mr. A. Grote, a copy of "Hyát i Afgháni."

5. From C. A. Wilson, Esq., through Mr. A. Grote, a copy of the Annual Report and Transactions of the Adelaide Philosophical Society for the year ending 30th September, 1867.

6. From Dr. G. W. Leitner through Mr. A. Grote, a photograph, containing portraits of Dr. Leitner and several Káfars, Chilási, Ghilghiti and Bálti natives.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected ordinary members :—

Dr. G. W. Leitner.

Lieut. C. H. F. Marshall.

W. Smith, Esq., C. E.

R. H. Renny, Esq.

The Rev. J. Roberts.

The following are candidates for ballot at the August meeting :—

H. E. Perkins, Esq., C. S., Hoshiyárpur, proposed by Dr. J. Fayrer, seconded by Bábu Rájendralála Mitra.

Pandita Chandramohana Gosvámí, proposed by Bábu Rájendralála Mitra, seconded by the President.

Captain J. W. Muir, Political Superintendent Sirohi, Rájputana, proposed by Dr. J. Ewart, seconded by Dr. F. Stoliczka.

R. T. Hobart, Esq., C. S., Bustee, proposed by V. Ball, Esq., seconded by M. H. Ormsby, Esq.

A letter from J. M. Scott, Esq., intimating his desire to withdraw from the Society was recorded.

The following report of the Council on Mr. Waldie's motion, referred to them, was read.

“That the Council have nominated a Sub-Committee to consider generally the revision of the Bye Laws of the Society by whom the subject of Mr. Waldie's motion will be discussed as well as others.”

The Council reported that they have elected H. Leonard, Esq., a member of the Finance Committee in place of A. Mackenzie, Esq., who had resigned ; and that they will summon a special meeting of the Society, to be held on the day of the Ordinary Meeting in September, for the purpose of making the formal transfer of charge of collection to the Trustees of the Indian Museum.

The President explained, that as the day of Ordinary Meeting in September would come very early in the month, it would be im-

practicable to have the proper circulars issued, so as to allow of the two months' interval from date of issue now required by the rules, and that the actual date of the Meeting would therefore be fixed by the Council.

The President reported that on a motion of the Hon'ble J. B. Phear, the Council have resolved to propose to the Society :

That the Society do record their recognition of the eminent services rendered by A. Grote, Esq., to the Society during the long period over which his connexion with the Society has extended.

The President in moving the above resolution remarked—

“It is with much pleasure I bring forward this motion from the Council. It is known to most persons here, although I believe we have no regular announcement of the fact, that Mr. Grote, who has long been connected with their Society, who has justly attained its highest honours, and has been one of its most hard working and devoted servants, will leave India, within a few days. It is to me a source of unalloyed pleasure that it should have fallen to my lot to be in the chair this evening, inasmuch as I have thus an opportunity which might not otherwise have occurred, of giving very briefly expression to my feelings, and specially, because it would be idle affectation to attempt to ignore what is well known to very many here, that on numerous questions, affecting the management of the Society, Mr. Grote's views, and my own, have frequently differed widely. In such differences of opinion, I see nothing to regret—on the contrary, I believe that the success of any Society like ours, must depend on the entire freedom of our discussions, and I might say, on the existence of a healthy and even decided ‘opposition party.’ In any climate, under any circumstances, but more especially under the peculiar conditions of our existence here, the inevitable result of the absence of some interest of this kind, is the induction of a state of lethargy, a kind of vegetable existence, which certainly does not, and certainly did not conduce to progress or success. And therefore I say, I have never regretted that there should have been opposition of view or difference of opinion. But I trust that on no occasion have I forgotten that an opponent is not necessarily an enemy. Our differences of opinion have been only as to the best methods of attaining the same end, the advancement of knowledge, and the improvement of this Society, as one of the great means for

that advancement. And here I would yield to none, in the heartiness with which I would desire to recognize the continuons, the active, the devoted services of Mr. Grote to this Society. There has always been present with him an earnest recollection of it, whenever the slightest opportunity occurred of promoting its welfare, or of extending its influence. And if on this ground alone, I believe the Society will feel called upon to receive with favour this motion of Council.

But in addition to this, those who have known Mr. Grote will agree with me in recognizing his hearty appreciation of the labour of others ; his cordial sympathy with the difficulties and perplexities of enquirers in every direction ; the solicitude with which he endeavoured to develop the treasures of Oriental learning, and the encouragement which he ever held out to the educated portion of our Indian brethren to affiliate their talents and energies to the common cause of promoting knowledge. And in all this, they will see additional claims on the Society, for the recognition of those services which you are now asked to record.

Mr. Grote's connection with this Society dates from 1849, he is of longer standing as a member than most others now resident in this country. And I know that I am only giving expression to the wishes of the Society at large, in saying that we trust he may still for many years enjoy health and rest in his native land. I feel confident the Society will accept this recommendation of the Council with an unanimous affirmative.

Mr. Blanford said,—A vote of thanks such as that just proposed, should not be allowed to pass as a mere formality ; and although as a vote proposed by the Council, it was not necessary to second it, he would wish, as one who had for some years held an office in the Society as a colleague of Mr. Grote's, and for a portion of that time under Mr. Grote's presidency, to record his testimony to the unwearied devotion with which Mr. Grote had always applied himself to advance its interests. This application had extended over many years, and from a period long anterior to Mr. Blanford's personal connection with the Society, but it was of his own experience of Mr. Grote, as the leading member of the Society that he wished to speak. His interest in the labours of the Society had extended to every department, and to all he had devoted himself in a

between Mr. Grote and himself, and there certainly had
meetings, in past times, but on such occasions Mr.
demeanour in the chair to those who most strongly
m, tended in no small degree to preserve the Society from
and to assuage excited feelings. He thought that this,
in other features of Mr. Grote's presidency, should be
long his many claims to the grateful recognition of the
he thought that they would long regret, the departure
of one to whom their Society owed so much.

tion was then passed unanimously.

J. B. Phear gave notice that at the next meeting of the
would propose that the Society record a vote of thanks to
rd who had lately resigned the General Secretaryship,
ces.

tion of Dr. F. Stoliczka as Natural History Secretary was

ental Secretary read the following extract from a letter
ra Chandranátha Ráya of Nátor, forwarding a facsimile and
ax impression of an inscription found in Rájshahi.

esent object of my writing you is to give cover to a small
f an inscription found at the base of a very old and pecu-
d stone idol found by myself in the midst of a jungle
shooting near a village called *Hapania*, and to request

The inscription is as follows :

७ दामयद्दीयमरू ॥:

The Secretary stated that the character of the inscription was 10th century Sanskrit, and its language, Newari. The words were दामयद्दीय मरू which literally means "not even a dām," i. e. price whatever was charged for the image on which the inscription is recorded, or, in other words, it was a free gift. It was probably dedicated by a Nepalese Hindu.

The Secretary then exhibited to the meeting a rare tetradrachma Antimachus Theos. It was in beautiful preservation, and appeared from the execution of the head and the legends to be undoubtedly genuine. A figure of this type of coin was some time ago published in the "Numismatic Chronicle" Fig. 7, plate iv. Vol. II, N. S., and noticed in the Journal of the Royal Asiatic Society of Great Britain and Ireland, by Mr. E. Thomas, but as it was taken from a cast, a figure from an undoubted original will, it is believed, prove interesting to numismatologists. This is in preparation and will be given with future number of the Proceedings. The coin has been purchased for the Society's cabinet for Rs. 100. It has on the obverse—

The head of the king facing the right, filleted, with the legend ΑΙΟΑΟΤ * * before the face, and ΣΩΤΗΡΟΣ behind it.

Reverse. Jupiter in the act of hurling the thunderbolt, with the Ægis on the left forearm, which is stretched forward. His left leg advanced to the left, and near it is an eagle with a chaplet of flowers over it. *Legend*, ΒΑΣΙΛΕΥΟΝΤΟΣ ΑΝΤΙΜΑΧΟΥ ΘΕΟΥ. *Monogram* A. N.

The Secretary also exhibited a coin of Azelisas which had been placed at his disposal for the purpose by Mr. Grote. It was a silver didrachma with the ordinary obverse, but a perfectly new reverse. On the *obverse*, it has the king mounted on a horse facing the right.

Legend, ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ ΜΕΓΑΛΟΥ ΑΖΙΛΙΣΟΥ. *Monogram*, Α.

Reverse. Female figure to the front standing on a lotus; the left hand rests on the waist, and the right over the stomach, holding something; on each side is a lotus stalk rising as high as the waist and



Fig 1. Artemachus Theos.

Fig 2. Axilases.

Vide Proceedings for July 1868 p 164

like Λ ; and the left γ .

verse of this coin is evidently founded on the type of the
are coin with the trident obverse, (*Ariana Antiqua*, plate vii.
327), which has a female figure standing amidst twining
but the elephants are new, and shew the thorough Buddhist
of the coin.

cretary then laid on the table a MS. of the poems of Chand,
t bard of Prithvirāja of Delhi, which had been lent to him
Library of His Highness the Mahārāja of Benares. He said
eighteen months ago, the Rev. J. Long brought to the
the Society that a complete MS. of Chand's works had
nted to the Library of the Agra College, by His Highness
ājā of Jeypur, and an application was thereupon made to
pal of the College by the Society for the loan of it, in order
carefully examined by a competent scholar. The loan, how-
declined, and on a subsequent application to His Honor, the
vernor of the North Western Provinces, the MS. was referred
wse, Esq., a member of the Society, for examination and
n the mean time intelligence was received of the existence
SS. of the work, one in the Library of His Highness the
edlah, and the other in that of the Mahārāja of Benares. The
oyal quarto of 697 pages, having 24 lines to the page. This
re a little more than 16,000 verses for the whole work.

was the family bard and constant companion of Prithvirāja, and accordingly an actor in most of the exploits he describes. Abounding in fulsome panegyric of the true oriental cast, his work has the rare merit of being a contemporary history of a time of which no other history exists, and was therefore of the greatest interest to antiquarians. Philologically it was also of great value, being the earliest specimen of Hindvi known, and as the hitherto missing link between the old Pali and the modern Hindvi, was calculated to throw light on the history of Aryan Indian vernaculars.

The MS. comprises 31 cantos as follows :—

Contents of Chand's Prithvirāja Rāyasā.

1. Entry of Anangapāla into Delhi and retirement to the north of Vadari.
2. The Battle of Ghaghar.
3. The Expedition to Karnāta.
4. The Marriage of Chandrávatī.
5. The Assumption of Sovereignty by Jaitarāj.
6. The Defeat of Kāngarā Ráo.
7. The Marriage of Hansávatī.
8. Sovereignty wrested from Palhára Ráo.
9. The Story of Varuna.
10. The Death of Somesvara.
11. The Overthrow of Pajjún.
12. Chand's Pilgrimage to Dwárká.
13. Defeat of Kaimás.
14. Murder of Bhima Bhaṭṭa.
15. The Early life of Sanjogatá.*
16. Description of Vinayamangala.
17. Anecdotes of S'uka.
18. The Defeat and Destruction of Báluká Ráo.
19. Assumption of Sovereignty of Pajjún.
20. The Battle of Pungasámanta.
21. The Cursed Hunt.
22. Description of Delhi.
23. The Story of a Jangama.
24. The Six Seasons.

* An English translation of this portion was published by Col. Tod in the Asiatic Journal for 1839.

25. The Penance of Sanjogatá.
 26. Life of Balukaráya.
 27. Defeat and Destruction of Kaimás.
 28. The Fort of Kedár.
 29. Description of Kanouj.
 30. The Huge Fetters.
 31. The Charmed Arrow.
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The following papers, the reading of which was postponed at the last meeting, were read.

I. Mr. W. T. Blanford's Notes on Abyssinia.

Senafé, March 11th, 1868.

I went out for a week with Carter (who has charge of the G. T. Survey, to Tekoonda and Halai, over one of the worst hill roads I ever saw. However, it was an interesting trip; I got a good number of animals, and sketched in the Geology pretty fairly. The table-land here runs out in great spurs of sandstone, and between these are valleys deeply cut into the Metamorphics below. Near this are a few hills of trachyte and basalt, apparently resting on the sandstone unconformably. No fossils are discoverable. I want now to get on to Antalo and see the oolites there; these sandstones may perhaps belong to them. Whether I can really do any geology worthy of the name or not, depends upon how long the expedition lasts. Hitherto I have done very little, and if all is over, as many expect, by June, I shall not have seen much.

In Zoology, I am doing much better; I have upwards of 200 species of birds and mammals, since I left Zoulla; that is, in less than a month. My last valuable capture was a pair of bearded vultures, (Lämmergeyers) and a Klipspringer (*Oreotragus*) which I shot yesterday. The Lämmergeyers abound in this camp, and I should have bagged one this afternoon, I think, if a man had not got in the way. They are very fine birds, though this is the smaller species, (*Gypaëtus occidentalis*, Bonaparte, I believe) and measures $1\frac{1}{2}$ feet less in the stretch of the wings than the Swiss and Himalayan ones. I have also a pair of the curious ground hornbill or Abbagamba mentioned by Bruce (*Bucorvus* v. *Tinctoceros Abyssinicus*). They are tolerably common, walk about on the ground and feed on insects.

They do not appear to perch on trees at all. All the hornbills (I have now four species) are marvellously insectivorous, and even the barbets (*Pogoniorhyncus*) of which I have I think, three species, are the same.

I find there is a well marked intermediate fauna on the slopes of the hills, consisting of birds found neither here on the highlands nor on the plains about Zoulla. So I have sent one of my skinners to Undul to collect. Sturt of the Land Transport Train, a very fair ornithologist, has promised to take care of him and shoot birds. Amongst other things, there are two woodpeckers there, of each of which I have a single specimen only, and many other birds. There are several of which I did not secure specimens at all : however, I hope to get them. I am not sure if any mammals are peculiar. There is a jackal-like beast which I have not seen elsewhere, but it may occur on the table-land.

15th. Since I began this, I find that the traps are far more extensively developed around this than I at first thought. There are a lot of trachytes, so exactly resembling sandstone, that I had marked them as such : I now find that they are clearly unconformable upon them. I have scarcely ever seen a greater sell. Some of the volcanic rocks, when slightly decomposed especially, cannot be distinguished even under a lens from fine argillaceous sandstone, and I doubt if I should ever have made out their real nature, had not some of them been so very columnar that their trappean nature was evident. In one hill near this, there are some of the finest columns I ever saw ; 200 or 300 feet long and as regular as possible.

You will perhaps have heard that Beavan has been very ill and prevented from coming out. A Mr. Jesse is appointed in his place and is now I believe in Zoulla. A second man, (Danford or some such name) is with him, and I understand they are hard at work. Zoulla is far better now, I suspect, than when I was there, for the heavy rain has made the whole place green and many birds and other animals, elephants amongst others, have gone down towards the coast. I have not seen an elephant yet. The biggest wild animal I have come across has been Koodoo. I saw three different bucks yesterday and a herd of does, but could not bag one. The species I believe is different from that of the Cape, but the buck is a noble animal, as large as a buck sambhur. The does are very like cow Nylgai, except

in having deer-like tails. Like the Nylgai too, they keep in herds away from the bucks, which are found solitary in general. Several of the sportsmen here persist in declaring that they have seen true deer with antlers. The fact is, they have seen koodoo. The very open curve of the horns, especially when they are not very large, makes them look marvellously like antlers at a distance.

Geology of the road from Senafé to Antalo.

Camp Antalo, March 29th, 1868.

Senafé, as I before mentioned, I think, is on sandstone, upon which a series of trachytes and basalts rest quite unconformably; the sandstone itself resting on metamorphics, which occupy all the lower ground and form many of the hills as far as Goona Goona, the first march. Here the sandstone comes in, in force, and continues for the main part of this distance to Attegerat, the 3rd halting place; trap hills occurring here and there, and a portion of the route being over them. From Attegerat the road passes over sandstone to beyond the Mai Wahiz, the 4th halting place, a high range of trap hills flat at the top, running along the west of the road; and beyond Mai Wahiz the road descends to a great plain of metamorphics, on the west of the watershed between the Nile tributaries and the salt plain; for it has been ascertained that the drainage of the Eastern flank of the Abyssinian highlands never reaches the sea, but is intercepted and lost in the great salt tract, below the sea level, which extends from just south of Annesley Bay to near Tajurra. The metamorphics extend beyond Ad Abaga (the 5th march) until near Dongolo, the 6th. Here, after descending a steep hill, a great change takes place. So far all has been simple enough; metamorphics below, sandstone above them, and trap capping the whole; the two upper series nearly horizontal, and near Attegerat apparently almost conformable; and the road passes from one to the other as it ascends and descends. At Dongolo just below the Ghat, sandstone comes in with a strong westerly dip. I had not time to make out whether it was faulted against the metamorphics or deposited in a hollow. Just beyond Dongolo, limestone succeeds, apparently resting on the sandstone, but of this I am extremely doubtful, for near this, sandstone appears to overlie the limestone. This limestone continues for upwards of 60

miles, to this place, occasionally capped by trap, and in one or two places granitoid gneiss emerges through it. Fossils abound, but these are very ill-preserved in general, and I have not had much time to hunt for them. *Ostrea*, *Terebratula* and several Lamellibranchiate bivalves are the most frequent forms. Ferret and Gullmier I believe, mark this tract as Oolitic, and doubtless they had better grounds for their opinion than I have yet seen. I can only say that the *Ostreas* look like secondary forms, and, as a guess, I should have suspected the rocks to be Jurassic or Cretaceous, which is confirmatory of the view taken by the French engineers. Doubtless, however, they obtained specimens which were compared by competent palæontologists.

Perhaps one of the most interesting things is that here, as in India, cotton soil abounds; but only on trap or in its immediate neighbourhood. It is exactly like Indian regur; just as abominably sticky after rain, and just as full of holes as the black soil of Guzerat and Malwa.

The road throughout, I should have mentioned, is close to the watershed, this route having been specially chosen for the purpose of avoiding the deeper ravines leading to the great hill tributaries, the Mareb and the Takazze.

Zoology.—I can only give you very few notes on Natural History. To my great surprise, the country is remarkable for the paucity of large mammals. They are far fewer than in India. From all accounts I had ever heard, I should have imagined the grassy plains we have traversed would have abounded in the different Antelopines. Nothing of the sort; not a wild animal is to be seen anywhere larger than a hare, until near this. Here two small kinds of antelope are found, which I cannot identify at present, as I have no books with me. One is of a reddish colour, about the size of the Indian Gazelle, with short straight horns: the other is mouse-coloured with a peculiar long muzzle. I am told it is the kleinbuck of the Cape. There has evidently been a change in the fauna since we have crossed into the Nile drainage, but it is not great. The *Hyrax*, some distance this side of Attegerat is the same as at Senafé. The hare appears to be the same, and I think the jackal too. The only Hyæna, I am pretty certain, is *H. crocuta*, and he is to be heard just outside one's tent every night. I shall not forget the row they make soon. Lions, elephants, hippopotami, rhinoceroses, giraffes, zebras and all

the big antelopes are conspicuous by their absence. Amongst birds, the most interesting I have noticed is *Corvultur*, the great carrion crow, with a curved sub-vulturine bill, which Jerdon, I think, is quite wrong in tracing to any affinity with the big ground hornbill. The latter, I scarcely think, can be a carrion eater. He is mainly insectivorous, and his habits are more those of some of the Ibises, picking over ploughed fields and meadows, or sometimes, like a bustard, hunting in high grass, for locusts, I suspect. They are in pairs and threes, rarely in larger numbers. Lämmergeyers are less common here than at Senafé, but still I frequently see them. I think I spoke of the species as *occidentalis*; I rather suspect now it is *Gypaëtus nudipes*, as the tarsus is quite bare. This, I believe, is the reverse of what is stated by Bonaparte. One of my interesting specimens is a true Concal (crow pheasant) white below, which Lieutenant St. John gave me. It is especially remarkable for having a long hind claw. Its habits, flight, &c., are exactly those of the Indian species. There are two kingfishers here, a *Ceryle* with the usual pied plumage, and a blue kingfisher. I have only seen the former, and he appears to me different from the common Indian species, but I did not obtain a specimen. I shot a Swift at Senafé very near *Cypselus melba*, but differing. It may be the same species which has just been described by Tristram as occurring in Southern Africa. I have no more *Nectariniæ*, nor any other tenuirostral birds that I can remember. One small parrot with a short tail occurs in pairs. I have not seen a woodpecker nor a true cuckoo on the tableland. Amongst the Sylvians, the *Saxicolinæ* are most conspicuous. I have now several species of true *Saxicola*, two of *Pratincola* and two of a genus closely allied to *Thamnobia*, and I believe I have not collected all I have seen. There is a very beautiful starling with bright iridescent plumage, which abounds in some places near this. A superb blue Roller very like the Indian form, but with two long central tail feathers, occurs occasionally, but it is rare. I have two very poor specimens but hope to get more.

The large two-spurred partridge of Senafé has disappeared. It is replaced by a species with red legs and red naked skin round the eyes, said to be two spurred, but the specimens I have seen are either females or young males and spurless. I have a pair of very handsome sandgrouse

(*Pterocles*) and a small bustard or florikin. One of the most curious birds I have obtained lately is a very small grey dove not larger than a lark, with a very long tail. As I have no books I cannot identify it. A waterhen is, I think, the only wader, and I have seen a duck which is, I hear, a mallard-like bird, probably allied to the Indian *Anas pæcilorhynchus* (or some such name) but I have not shot a specimen. I have not seen a Tern in the country.

I have not so much as seen a snake or a tortoise on the highland; frogs and toads are scarce, and lizards far from numerous. I have two species only, one of them a Scinque; I have no fishes as yet: there are some, however, of fair size in the streams. It is a wretched country for land shells. On the limestone, one *Helix* certainly abounds, and there are one or two *Pupas*: that is all I can find. Insects are rare at this season of the year, and I have neither time nor appliances for collecting them.

Captain Beavan, as I think I mentioned, has been unable to come out, and the Zoological Society have sent out Mr. Jesse. He has an assistant with him, and both were, by the last accounts, busily collecting at Zoulla. Markham, the geographer, is in front with the advance. Dr. Cook has been very ill, but is somewhat better; he is working at Meteorology at Senafé.

In the probable event of the expedition terminating soon, I have made the following disposition with regard to my collectors. One man is at Undul in the pass with Captain Sturt of the Transport Train. Another who can shoot, I have left with my Madras boy, who can skin a little, to assist him at Attegerat. The third I carry on with me. He is a lame man (Gooloo by name) and consequently rather an impediment, but he skins well and quickly. Now and then I get specimens from various officers, and altogether, although, if the expedition is over in June, as appears probable at present, the time will have been far from sufficient to enable me to collect the fauna thoroughly, I hope to have a very fair collection.

Camp Esindyé, Wadala plateau, near Magdala, April 1st, 1868.

I have been unable to write for a long time. Finding I could not get my kit on fast enough, I left everything behind at Ashangi and went on with my horses. I just reached in time to go into

Magdala behind the storming party. I lost by one day the skirmish on Good Friday. However I saw everything else.

I will write more another time when I have time and paper. Here at 10,000 feet are several peculiar birds. I am collecting as well as I can by myself, but it is slow work. I have returned before the army.

It was a hard march up : constant rain from Dildee, and almost from Ashangi ; long marches, frightful roads, cold, and sundry other small drawbacks ; water was plentiful at Zoulla when compared to Magdala and the chief's Camp at Eraga. However all keep well. I am in good health, but I have been wretchedly unlucky. My best horse, a most useful little Arab, has been stolen, and the only man I have with me who can cook, has broken his arm. However, I am not done for yet, and I am trying to induce the chief to send me to Lake Dembea or to Shoa. But I fear he will not.

All south of Antalo is trap ; basalt and trachyte in horizontal beds at least 5,000 feet thick. Ashanghi is a curious little lake of sweet water without an outlet above ground. Maps all poor.

Zoulla, June 8th.

I wrote you a few lines about a month ago from Esindye I think ; thence I hurried into Ashangi, getting a few things only from the high Wadda plateau, for my letter ordering my men up was delayed, and they never came up. At Ashangi I waited for the chief, as I had written to apply to be sent with an escort to Lake Dembea and the Chelga coal field, and, if practicable, beyond into Kwarra and the Nile country. However the chief first wrote to me to give my plans in detail, which I did, and then refused even to discuss the matter. At Ashangi I found Cook, whom I had left ill at Senafé. We came back together.

The best thing I got at Ashangi, was an extraordinary rat with the habits of a mole or of a bamboo rat, but living on roots of grasses just as the bamboo rat (*Rhizomys*) does on roots of bamboos. I got a few water-birds too, I came ahead of the chief's camp to Antalo ; halted there a day ; then slipped off without a convoy and came on to Agala and Dongolo where I found, at last, a few decent fossils in the limestone. They are Oolitic I think. I have a *Pholadomya* and a *Trigonia*, like the little species so common in the Cutch Oolites. I also obtained several birds I wanted. Thence I marched with the

chief's camp to Senafé and down to Koomeylee, staying three or four days at each. At Koomeylee the heat was great; 112° and 113° in the shade, but it went down to 95° at night. Here it is cooler; never much more than 105° I think.

The fauna at Koomeylee had totally changed since February. Many new birds having arrived, and all or nearly all the old ones vanished. I got a few good things.

W. T. BLANFORD.

The President mentioned that in more recent letters Mr. W. Blanford stated that altogether he had been able, notwithstanding the shortness of the time, to bring together about 900 specimens of natural history.

On the Anatomy of *Sagartia Schilleriana*, and *Membranipora Bengalensis* by Dr. F. Stoliczka. (Abstract.)

Dr. Stoliczka communicated to the meeting the results of his examination of the anatomy of *Sagartia Schilleriana* and *Membranipora Bengalensis*, two species found living in brackish water at Pannering.

After having briefly pointed out the circumstances which led to the discovery of the *Sagartia* [this being a species of the *Actiniaceæ*] Dr. Stoliczka stated that there are hardly any instances recorded of species of this kind of corals having been permanently found living in brackish water. The *Actiniæ* [using this name in a general sense] are as a rule only met with attached to rocks along the sea shore, generally at moderate depth, or hidden in crevices and holes between the rocks. The present species which belongs to the genus *Sagartia* found living, attached to old trunks of trees, in water which, according to an analysis of Mr. D. Waldie, only contains about one-third the saline constituents of pure sea water, in 1000 parts of which there are from 32—37 parts. In general, however, all the principal constituents, the chlorides, iodides, &c., are present, the difference only affecting quantity, not the quality.

The principal and distinctive characters of the species, *Schilleriana*, are the extreme softness and transparency of

By recent mails announce that Mr. Blanford was starting for Massowah, from which expedition he looks

having the column marked with longitudinal, alternating, greenish bands, the rest of the body being dull whitish; the number of septa usually amounts to 48; the ovaria are bluish purple, the craspeda yellowish or greyish white and the acontia purely white.

Dr. Stoliczka then drew the attention of the meeting to the most interesting points relating to the anatomy of the species. He first gave a general sketch of the principal parts of a *Sagartia*, and then stated that in the present instance, the body was found to be composed of five different layers. The outermost is almost only represented by a mucous substance, chiefly composed of large *cnidæ*, or nettle cells, and some few, pale green, pigment cells. Then follows a thin muscular layer, principally composed of concentric or cross fibres; next a rather thick layer of green pigment, then again a thick muscular layer gradually passing into a tough, muscular tissue, in which skleroids of two kinds are imbedded. The one kind are long and cylindrical bacilli, with short lateral processes and consist of carbonate of lime; the other kind are thin, flat, rectangular plates of various forms consisting of silica.

The nature of these skleroids, after their difference of form has been observed by simple maceration of the tissue, was positively ascertained by burning a specimen in a platina crucible, until all organic matter disappeared. The result was, that a perfect skeleton of the animal was obtained, representing an irregular network of solid, white fibres. Upon placing a portion of the skeleton in hydrochloric acid, the largest portion, being carbonate of lime, was dissolved, leaving behind a very thin membrane composed of the siliceous skleroid particles. It is to be hoped that this observation will induce other naturalists to examine similar species, and there is a probability that the definition of the *Anthozoa malacodermata* will have to undergo considerable changes.

The tentacles are usually arranged near the periphery of the disc in apparently alternating circles, the number of them rising up to about 150 or 160. The *acontia*, *craspeda* and *ovaria*, all are attached to the internal side of the strongly muscular larynx. The *acontia* are very long, purely white bands, solely consisting of long *cnidæ*, being transparent cells with more or less prolonged, retractile and bearded stilets, called *ecthoræa*. These *acontia* are issued through the holes

(*cinclides*) of the integument, whenever the animal is irritated serving as defensive organs. The *craspeda* are similar bands of a yellowish colour, but they are shorter and never ejected, they seem to be connected with the digestive system ; their composition is similar to that of the *acontia*, except that there is in the centre a considerable accumulation of an intercellular substance. The *ovarie* are long strings, lying between the mesenterial folds ; there are 12 pairs of them present composed of eggs only. Thread-like organs chiefly composed of spermatozoa appear to be only occasionally formed.

A small live specimen and parts of the solid skeleton were exhibited and the microscopical structure of the body illustrated by diagrams and preparations.

With reference to *Membranipora Bengalensis*, [a species of *Bryozoa* the lowest organized molluscs], Dr. Stoliczka said that the *polyzoarium* usually consists of a single layer of hexagonal, flat cells which are arranged in alternate rows. The upper part of the cells is membranaceous, only in old specimens partially solid. The animal is whitish, and the statoblasts are greenish. An interesting observation was made regarding the progressive growth of the *polyzoarium*. At first only a small, very thin, membranaceous cell is formed, being filled with a greenish granular substance. In the next stage a small embryo, with a transparent centre is visible, but the cell is still without an aperture. Subsequently the tentacles become traceable in the translucent centre of the embryo, and the dark, granular substance diminishes in the same degree as the size of the embryo increases ; the cell only communicates with the neighbouring ones by small lateral holes. At last the embryo is seen to be attached to the posterior wall of the cell by a few thin muscles, a long thread is developed at the base, so as to fix the cell and support its subsequent attachment, and an oval aperture is formed in the front part of the upper membrane. The cell is then perfect, the animal communicates direct with the surrounding medium, the statoblasts are soon developed and the structure of the cell becomes gradually more solid. Specimens of the *Membranipora* were also exhibited ; the species appears to be common in all the brackish waters of the Sunderbunds.

"Notes on some stone implements found in the district of Singbhoom by Captain Beeching," communicated by V. Ball, Esq.

When in September last, I laid before the Society an account of a chipped celt which was found in Manbhoom, I ventured to predict that an examination of the adjoining district of Singbhoom, which is at present inhabited by several aboriginal races, would probably result in the discovery of traces of the stone age. The chert flakes and knives now exhibited, were found in the early part of the present year by Captain Beeching when, in command of a Company of the 10th Madras N. I., he marched from Ranchi to Chaibassa for the purpose of quelling the disturbances in the tributary state of Keonjur. While awaiting orders at Chaibassa he was so fortunate as to make the discovery, described in the following note :

"The accompanying chippings were found principally at Chaibassa in the Singbhoom district and also at Chuckerdherpore, a town about sixteen miles off. They were generally to be seen on or near the banks of the river, and attracted the eye at once by the striking difference they presented to the other stones lying near them. Some were lying loose in gravel, others in the sandy depressions and ravines near the river, and in one instance 'the chips' appeared to radiate from a small rocky mound, becoming more numerous as one approached the central point, until at last there was hardly a square foot of earth which did not contain several of them."

Chert of various degrees of purity is the material of which these flakes are made. In several parts of Manbhoom there is a bed of highly vitrified quartzite with conchoidal fracture. A similar one in Singbhoom doubtless furnishes the cherts.

In point of manufacture, these flakes are inferior to those from the Jubbulpore district, the chert not yielding such sharp edges as the agates and flints of which the latter are made.

The reading of the following papers was deferred until the next meeting.

Notes on the Keriahs, an aboriginal race, living in the hill tract of Manbhoom, by V. Ball, Esq.

Dr. Mingay, on Malay animals.

Dr. King, on Birds of Goonah.

The receipt of the following was announced :—

1. Notes on the Keriahs, an aboriginal race, living in the hill tracts of Manbhoom, by V. Ball, Esq.
2. Notes on the Lion of Aboo, by G. King, Esq.
3. An endorsement from the Under-Secretary to the Government of India forwarding a classified list of races in the Punjab.

LIBRARY.

The following additions have been made to the Library since the meeting held in June last.

Presentations.

. *Names of Donors in Capitals.*

Bulletin de la Société de Géographie, April, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Annual Report and Transactions of the Adelaide Philosophic Society, for the year ending 30th September, 1867.—C. A. WILSON Esq.

Journal Asiatique No. 39, 1867.—THE ASIATIC SOCIETY OF PARIS.
Actes de la Société D'Ethnographie, No. 8.—THE ETHNOGRAPHIC SOCIETY OF PARIS.

Indische Studien, x. 3.—Dr. A. WEBER.

The Journal of the Bombay Branch of the Royal Asiatic Society 1865-66. THE SOCIETY.

The Report of the British Association for the Advancement of Science, 1866.—THE ASSOCIATION.

Report of the Committee of the Bengal Chamber of Commerce from November, 1867 to April, 1868.—THE BENGAL CHAMBER OF COMMERCE.

Anthropological Review, Vol. VI. Nos. 20 and 21.—THE ANTHROPOLOGICAL SOCIETY OF LONDON.

Annual Report of the Lahore Lunatic Asylum for the year 1867 THE GOVERNMENT OF BENGAL.

Report on Leprosy by the Royal College of Physicians.—DITTO.

Records of the Geological Survey of India, Vol. I. Part I. 1868 DITTO.

Annual Report of the Geological Survey of India and the Museum of Geology, Calcutta.—DITTO.

The Calcutta Journal of Medicine, Vol. I. No. 5.—DR. MAHENDRA-LALA SARACARA.

The Alps and the Himalayas, a Geological Comparison by H. B. Medlicott, Esq.—THE AUTHOR.

Hyat i Afghani by Mahommad Hyát Ali.—THE AUTHOR.

The Calcutta Gazette or Oriental Advertiser, 1785-86, 1789-90.—THE REV. J. LONG.

The Samachara Darpana, 1824.—DITTO.

A Collections of 50 prints from Antique gems.—DITTO.

A Calendar of Indian State papers, Secret Series, 1774-75.—DITTO.

The History of the Christian Church in Maharashtri by the Rev. C. G. Barth.—DITTO.

Naukeurige Versameling der Gedenkwaardigste Reysen na Oost en west Indien.—DITTO.

Discours sur les affaires de Pologne prononce par M. Le Mrs de la Rochejaquelin.—DITTO.

Abolition du servage en Russie.—DITTO.

The Polish question, or an Appeal to the good sense of Englishmen by a Russian.—DITTO.

Proverbs, Malayalam, Tamul, Chinese, Panjabi, Servian, Maharashtiri and Hindi illustrating the popular feelings and various nationalities.—DITTO.

Exchange.

The Athenæum for March and April, 1868.

Purchase.

Comptes Rendus, 13, 14 and 15 ; 1868.

The Annals and Magazine of Natural History, No. 5, 1868.

Revue de Zoologie, No. 3, 1868.

The Ibis, No. 14, 1868.

Gould's Birds of Asia, Part XX.

Beddome's Ferns of British India, Part XX.

Lecons sur la Physiologie et l'Anatomie Comparée by E. Milne Edwards, Tom IX. Part I.

Revue des deux Mondes, 15th April and 1st May, 1868.

Revue Archéologique, Tom XVII. No. IV.

The Numismatic Chronicle, Part I., 1868.

The Edinburgh Review, No. 260.

The Calcutta Review, May, 1868.

Assyrian Dictionary, by E. Norris, Part I.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR AUGUST, 1868.

A Meeting of the Society was held on Wednesday, the 5th instant, at 9 o'clock P. M.

T. Oldham, Esq., President, in the chair.

The minutes of the last Ordinary General Meeting were read and confirmed.

The receipt of the following presentations was announced : —

1. From Bábu Hemachandra Deva—

A nest of *Orthotomus longicaudus*.

2. From the Barrackpore Park Menagerie—

A specimen of *Mellivora ratel* (Badger).

A specimen of *Pavo muticus*.

3. From Lieutenant J. Gregory—

A specimen of *Teliphonus*, from the Naga Hills.

4. From Bábu Rákháladása Háladára—

A quantity of *Kaolin* from Mánbhúm.

5. From J. Avdall, Esq.—

A copy of *Grammaire Polyglotte contenant les principes des langues Arabe, Persane, Turque et Tartare, par Le P. Minas Medici*.

6. From the editor—

A copy of *Prasannarághava Náataka*, edited by Pandita Govindachandra Sástri.

7. From the Superintendent Government Mathematical Instrument Department—

Two base line chains, 100 feet each.

A Zenith Sector, with stand.

A Zenith micrometer, with stand.

Formerly used by Colonel Lambton in the G. T. Survey.

8. From Dr. D. B. Smith—

Twelve *Udia* skulls.

9. From the Calcutta Brahma Samāja—

A copy of *The Doctrine of Christian Resurrection*.

A copy of *Vedantic Doctrines vindicated*.

A copy of *Selections from Vedanta*.

A copy of *Hindu Theism*.

A copy of *Theist's Prayer-Book*, and twenty other small pamphlets.

10. From Colonel J. C. Haughton—

A copy of *Padmaduta Kāvya*, by Siddanātha Vidyāvāgisa.

A copy of *Addresses delivered at the Hitoishini Samāja of Cuch Vehara*.

11. From W. Oldham, Esq., LL.D., Offg. Magistrate of Ghazeeপুর.

Some earth which fell in a shower at *Kootubpur*.

The following letter, addressed to the Secretary, accompanied the donation :—

Ghazeeপুর, the 22nd July, 1868.

‘A report has been received, which there is reason to believe is authentic, that on the 15th instant at noon in Kootubpur, of the Shadiabad Pergunnah of this district, a shower of earth moistened with rain fell.

Small balls of moistened earth about the size of peas fell slowly and for considerable time.

I forward herewith specimens of the earth which fell.

From the 18th of June, until the 5th of July, no rain fell in this district; since then we have had abundant rain. The rains set in generally on the 17th, but on the 15th and 16th local showers occurred.

I am not aware whether the shower has any scientific interest or importance, or not; but if it has, you will, I believe, find that, a day or two later, a somewhat similar shower fell at Cawnpur.’—

The President stated that the earth alluded to had been carefully examined under the microscope, and that it was nothing but the ordinary surface silt of the plains of Bengal, which might have come from almost any part of the Gangetic plain. Occasionally the character of

the earth which fell in this way as mud in showers, was of such marked and distinctive nature, as would enable a tolerably accurate conclusion to be arrived at, regarding the direction from which it had been carried, or the locality from which it had first been lifted to the clouds, to be again deposited with rain.

The following gentlemen duly proposed and seconded at the last meeting were balloted for, and elected Ordinary members:—

H. E. Perkins, Esq., C. S.

Pandita Chandramohana Gosvami.

Captain J. W. Muir.

R. T. Hobart, Esq., C. S.

The following are candidates for ballot at the September meeting:—

Baron v. Ernsthausen, proposed by Mr. F. Schiller, seconded by Dr. F. Stoliczka.

R. M. Adam, Esq., proposed Mr. F. Schiller, seconded by Dr. F. Stoliczka.

E. Ch. Van Cutsem, proposed by Dr. F. Stoliczka, seconded by the President.

R. V. Stoney, Esq., C. E., proposed by the President, seconded by Mr. C. A. Hacket.

C. Lazarus, Esq., proposed by Mr. G. Robb, seconded by Mr. D. Waldie.

Letters from the following gentlemen intimating their desire to withdraw from the Society were recorded—

Lieutenant-Colonel B. Reid.

Colonel J. C. Brooke.

The Hon'ble J. B. Phear, in accordance with the notice given at the last meeting, moved—

That the Society record a vote of thanks to Mr. H. F. Blanford, who had lately resigned the General Secretaryship, for his services.

Mr. Phear said that in proposing the resolution, he should use very few words, because he thought that, even on an occasion like this, the praise which was unspoken was the highest praise. Mr. Blanford had been many years a zealous member of the Society, and for several years he had actively and well discharged the duties of Secretary. He would ask the members to call to their minds what this service really involved. He thought he was not wrong

in supposing that they considered their Society as the first Scientific Society in India. They were proud of their Ethnological and Antiquarian researches. And they were willing to flatter themselves that they could correspond on equal terms with the Literary and Scientific Societies of Europe and America. Let them remember that in these things their Secretary was the mouth piece of the Society, and that certainly Mr. Blanford in discharge of these duties had never failed to reflect credit upon the body. It was few persons who possessed the qualifications needed for the post, and fewer still, who would sacrifice their private leisure to perform its functions. If they were so fortunate (as he believed he might venture to assume they were) that they had already secured Mr. Blochmann to succeed Mr. Blanford, they must not forget, that they had enjoyed the further fortune of having Mr. Blanford as the predecessor of Mr. Blochmann and unless they gave the only return in their power, unstinted thanks to the retiring Secretary, they would be virtually telling Mr. Blochmann that he had undertaken a thankless office.

Dr. Fayrer seconded the motion, which was unanimously carried.

Read a letter from the Under-Secretary to the Government of India, For. Dept., forwarding further report on the Cromlechs of Coorg, dated Coorg, 22nd May, 1868.

‘In continuation of my letter No. 3301 of the 4th March last, I have the honor to report that in accordance with the instructions of the Commissioner, I have caused eleven of the Cromlechs, lately discovered in the vicinity of Veerajenderpett, to be excavated, and beg to submit the results of the explorations made by myself and my Assistant, Lieutenant J. S. F. Mackenzie.’

2. ‘The parallel barrows, or mounds of earth, alluded to in my former report, though containing one or two Cromlechs, were found not to cover continuous rows of these structures; but the Cromlechs now excavated were situated below large mounds and covered over with trees and dense brushwood, showing that they had not been touched by the hand of man for ages past. These structures consisted, like the others reported on, of oblong chambers, the bottom and sides composed of large single slabs of unhewn granite, and surmounted by a large slab of the same description. The longest chamber was $7\frac{1}{2}$

feet long, by $4\frac{1}{4}$ broad and 5 feet deep. The several dimensions were as follows :—

<i>No.</i>	<i>Length.</i>	<i>Breadth.</i>	<i>Depth.</i>
1.	6 feet 4 inches.	3 feet 8 inches.	3 feet 8 inches.
2.	6 „ 6 „	4 „	4 „
3.	7 „ 6 „	4 „ 3 „	5 „
4.	6 „ 9 „	3 „ 4 „	2 „ 6 „
5.	5 „ 6 „	3 „ 3 „	3 „ 9 „
6.	5 „ 5 „	4 „	3 „ 6 „
7.	6 „	3 „ 3 „	3 „ 3 „
8.	6 „	3 „	3 „
9.	7 „	3 „	4 „
10.	6 „ 3 „	3 „ 9	3 „ 6
11.	5 „	3 „ 9	4 „

3. 'All these Cromlechs had square or segmental apertures which the natives always point out as a proof that these structures used to form the abodes of the pygmy race, described in their legends. Some have supposed that these apertures were made use of for the purpose of introducing the cinerary urns and bones of the members of the family into the sepulchral vault, as they died one after the other. I am inclined to this belief, as the urns were invariably discovered in each corner, and often piled one on the top of the other, and these openings are always at the top of the front slab, and immediately below the super-incumbent slab. The doors or apertures were generally found to face towards the east, but strange to say, one was found facing to the north, and a few to the west. They are $1\frac{1}{2}$, $1\frac{3}{4}$, and 2 feet wide.'

4. 'I am glad to be able to state that the excavations resulted in the discovery of several antique-shaped urns and pots, composed of thick red and black pottery, apparently highly glazed, some of which are on four feet, and some are tripods. Lieutenant W. Freeth, the Assistant Superintendent of the Revenue Survey, has kindly sketched and lithographed a group of these urns, and his lithographed copies will convey a better description of these antique vessels than any words of mine can do. (Copy of these drawings is given, Plate 3.) They are all full of hard earth, apparently well rammed in by the rain-fall of successive monsoons. I had some of the damaged

vessels broken up, and the contents carefully sifted, but could not discover any traces of bones, whether calcined or not. This would lead to the belief that these vessels had not been used as cinerary urns. The small fragments of charcoal were generally found in the earth inside the Cromlechs and smaller cists.'

5. 'Below the sketch of the urns, Mr. Freeth has drawn some of the pieces of iron weapons found in these Cromlechs. The large one would appear to have been a spear or large javelin, and the others arrows and hilts of daggers.'

6. 'There are no concentric rows of stones round these Cromlechs as generally found elsewhere; but I found that the Cromlechs Fraserpett had distinctly such rows of upright stones round each. These look as if they had been tampered with, though not for many years past; but I will cause them to be carefully excavated next month, and will submit a separate report on the results.'

(Sd.) R. A. COLLE,
Supdt. of Coorg.

The President, in inviting the remarks of the Members on this communication, said: It was one of the most interesting discoveries of the kind which had yet been recorded in India. They had been what were called Cromlechs, but which are really more of the type of the Kistvaens of Northern Europe than of the true Dolmen, of very peculiar construction, of double chambers, such as are represented in a previous number of the Proceedings, existing under circumstances which would prove that for a very long period at least, they had not been disturbed. They were covered by large mounds of earth, obviously artificial, and this earth covered with a thick growth of underwood and large timber-trees. And on opening these curious structures, remains of pottery were found as represented in the drawings before the Society (Plate 3), which differed materially from the pottery now in use. In a slight degree the forms of the vessels were different; the one more especially of an elongated amphora-like shape, (Fig. 5), also that shewn in Fig. 7, and Fig. 4, the outline of which, combined with the peculiar arrangement of the foot or feet seemed to him not exactly similar to those now in use. This, however, was a point by no means easy to decide, as the forms of pottery in common use, were countless, and varied most materially in different

en, along with this pottery, were found several remains of iron
ons or tools, as represented in the drawings. These were pecu-
interesting. Several years since he had noticed to the Society the
us fact that wherever any weapons or tools, or any trace of
lic material had been found in such structures, they had invariably
of iron. He was not aware that anything so perfect as these
described had been previously found, but wherever found, or in
ver condition, they had always been of iron. Now, knowing
pidity with which iron decomposes in this climate, and looking
tolerably well preserved condition in which these remains were
, it would lead him to attribute to the period of their entomb-
a date much less ancient than would at first appear justified
e rude and almost unhewn nature of the structures in which
have been found. It was strange that among all these old
lechs, and other structures of unhewn stone, not a trace of stone
ons had been found, although within short distances they occur
lantly.

e character and shape of the iron remains found in these Coorg
nlechs,' would also indicate a more advanced knowledge of the
metallurgy than could be easily reconciled with any very early

Of course it is possible that the race who last used or occupied
structures, was totally different from that which first constructed
but he thought this was an exceedingly improbable supposition.
oped the Commissioner of Coorg would continue these investi-

two, the lower part of the vessels exhibited the same general form as the others did: the deviation from the type took place in the upper part, where a sudden change in the curvature of the surface caused a cusp in the outline. The result no doubt was graceful, and a step in advance of the art, which produced the other, (as he thought) older form. It occurred to him that it might have been brought about something as follows: Experience taught the potter that his work would be materially facilitated, if he formed his vessel in two pieces, and afterwards united them. But in adopting this practice, which prevails almost universally in this neighbourhood, the potter still tried his best to keep to the original outwardly convex curvature. Then it was discovered by some innovator that the making of the vessel in two pieces afforded an excellent opportunity for giving variety to the form, and hence came the abrupt alteration of curvature exhibited in the two figures in question. He thought that even these forms, if his memory did not mislead him, might be paralleled in the bazars of this town. The three little feet, which appeared in some of the figures attached to the hemispherical surface of the vessel, to render it capable of standing, was a contrivance common enough now. It was remarkable that not one of the vessels figured had a base other than the trivet referred to, and in this respect they corresponded closely with the vessels in common use among the people at the present time.

Rev. J. Long asked if it was known what term or name the people applied to these Cromlechs, and whether this name was a word belonging to the language now in use there, or was a word only traditionally known. The value of Etymological research in cases where history was silent, was immense, and becoming daily more acknowledged. It would be desirable to know whether these words were applied indiscriminately to all such structures, or only to those of a peculiar type.

The President said the communications now before the Society gave no information on these points, but he would endeavour to obtain answers to Mr. Long's valuable suggestions and queries.

Read also a despatch from the Secretary of State for India on subjects of Architectural and Artistic interest in India.

India Office, London, the 28th May, 1868.

To His Excellency the Right Hon'ble the Governor-General of India in Council.

SIR,—I forward herewith, with reference to previous correspondence, copy of a letter* from the Lords of the Committee of the Council of Education, and desire that your Excellency in Council will issue instructions for a compliance, without any undue interference with their more important duties, with the wish of their Lordships for more detailed information respecting objects of Architectural and Artistic interest in India.

(Sd.) STAFFORD H. NORTHCOTE,

Dated 12th May, 1868.

From H. COLE, Esq., Science and Art Department, to the Under-Secretary of State for India.

‘I am directed by the Lords of the Committee of Council on Education to thank you for your letter of the 1st instant, enclosing a copy of a Despatch from the Government of India, with a list of the objects of Architectural and Artistic interest in the Mysore Territory.’

‘Their Lordships are of opinion that it would add to the value of such lists if, in future, some further details could be given.’

‘It would be desirable to state, as respects each building, what is the style and date, its materials of construction, its present use, whether or not it is decorated by sculpture or colored decoration, and its present condition.’

‘I am, therefore, to request that you will move Sir Stafford Northcote to direct that all the information that may be possible, may be given under the above heads in any future list which may be transmitted from India.’

The President stated that the Council wished this Despatch and its enclosure to be made known to the Society at large, in order that any individual member who might be able or desirous of contributing further information on the points referred to, might be aware of the kind and the extent of detail asked for by the Department of Science and Art.

* Dated 12th May, 1868.

The following papers, the reading of which had been postponed at the last Meeting, were read :—

I. *Notes on the Kheriahs, an aboriginal race living in the hill tracts of Mámbhúm, by V. BALL Esq., B. A.*

In the special Ethnological number* of the Society's journal, Colonel Dalton gives an account of the Kheriahs. He says that they are most nearly allied to the Juangas or Putoons, both forming branches of the Moondah family.† They are quite distinct from the Korewahs, another branch of the same family. A few colonies of this last mentioned race are, I believe, to be found in Mámbhúm.

The position of the Kheriahs having thus been established on the best authority, it is unnecessary for me to allude to it further; my simple object being, in connection with my note on the stone implements of Singhbhúm, to draw attention to a race who owe to their Arian conquerors what little traces of civilization are observable amongst them. I have had singular opportunities of seeing the Kheriahs in their homes, in the recesses of the jungle, where they live shut out and hidden from the surrounding world.

If we are disposed to regard these people as savages, their Sonthal and Bhumij neighbours do not treat them much better, *ban mámus* being a term commonly applied to them.

The Kheriahs shew a marked dislike for civilization, constantly leaving places where they have any reason for supposing that they are overlooked.

Their houses, generally not more than two or three together, are situated on the sides or tops of the highest hills: they stand in small clearances; a wretched crop of *bajera* being sown between the fallen and charred trunks of trees.

Close to the south boundary of Mámbhúm, there are a succession of hill ranges, of which Dulma (3047ft.), the rival of Parisnath, is the

* Page 155.

† In Vol. XI., p. 203 of the Journal, Lieut. Tickell described a race called Bendkars of Keonjur. They did not know of any relationship existing between themselves and the Kheriahs, but they are, in many respects, a similar race, living in the same kind of houses, on hill tops, and deriving their principal subsistence from the same roots and fruits.

highest point. On this hill I saw three or four neat little Kheriah cottages made of wattled bamboo, which, together with the small standing crop, had, for no apparent reason, been deserted. Further west, just outside the boundary of Máubhúm on a plateau formed of trap, where there was a good water supply, the small Kheriah villages had assumed a somewhat permanent appearance. Occasionally Kheriah cottages are to be seen on the outskirts of villages; but this is a departure from what is one of the most characteristic customs of the race.

Besides the Kheriahs, there is another race called *Pahareas*, of somewhat similar habits, living on Dulma hill range. One of them told me that his race were superior to the Kheriahs, with whom they could neither eat nor drink. One of the chief distinctions between them appeared to be that the Kheriahs do not eat the flesh of sheep, and may not even use a woollen rug. It would be exceedingly interesting, if this custom could be traced to its origin; I do not remember to have seen it stated of any other race. In her respects the Kheriahs are not over-fastidious feeders. Both races eat cattle that have been killed by wild animals, and very possibly too, those that have died from disease.

The first Kheriahs I met with were encamped in the jungle at the foot of some hills. The hut was rudely made of a few *sál* branches, its occupants being one man, an old and two young women, besides three or four children. At the time of my visit, they were taking their morning meal, and as they regarded my presence with the utmost indifference, without even turning round or ceasing from their occupations, I remained for some time watching them. They had evidently recently captured some small animal, but what it was, as they had eaten the skin before, I could not ascertain. As I looked on, the old woman distributed to the others, on plates of *sál* leaves, what appeared to be the entrails of the animal, and wrapping up her own portion between a couple of leaves, threw it on the fire, in order to give it a very primitive cooking.

With regard to their ordinary food, the Kheriahs chiefly depend upon the jungle for a supply of fruits, leaves, and roots. I got them to collect for me specimens of the principal species they used; but as I found that, with few exceptions, they were included in the list of

edible plants which I described to the Society on a previous occasion,* I do not repeat them here.

Besides these, however, the Kheriahs eat rice, which they obtain in the villages in exchange for several jungle products, such as honey lac *dhona* (from the *sál*), *tusser* cocoons, *sál* leaves, and bundles of bamboo slips called *khúrki*, wherewith the leaves are stitched into plates.

That the rice which they thus obtain in exchange, though small, is an important element in their daily food seems apparent from the fact that a large number of them are said to have died in the famine. I can only explain this by supposing that they lost heart on being deprived of what had been a regular source of supply, and failed to exert themselves in the collection of an extra quantity of roots. An explanation somewhat similar to this was given to me by a Sonthal who was speaking of his own race, that those who underwent the labour of searching the jungles escaped, while those who sat in their houses wishing for better times, as a matter of course, died.

The roots which they obtain in the jungle are dug up with considerable labour from the rocky ground, by means of an instrument called *kúnthi*. It consists of an iron spike, firmly fixed in a wooden handle. The point of this, as it is natural it should, frequently becomes blunted; to avoid the necessity of taking it to be sharpened perhaps half a dozen miles to the nearest *kumar*, the Kheriahs have invented for themselves a forge, the blast for which is produced by a pair of bellows of the most primitive construction. They consist of a pair of conical caps about eighteen inches high, which are made of leaves stitched together with grass; these are firmly fixed down upon hollows in the ground whence a pair of bamboo tuyers convey the blast produced by alternate and sudden elevations and depressions of the caps to a heap of ignited charcoal; in this the iron spikes are heated until they become sufficiently soft to be hammered to a point by a stone used as a hammer on a stone anvil.

The Kheriahs never make iron themselves, but are altogether dependent on the neighbouring bazars for their supplies. It is to this point that I wish more particularly to draw attention. Had they at any period possessed a knowledge of the art of making iron, con-

* J. A. S. B. 1867, Part II., No. II. p. 73.

servative of their customs as such races are, it is scarcely likely that they would have forgotten it. It is therefore not unreasonable to suppose that there was a period, anterior to the advent of the Hindus, when iron was quite unknown to them, when, owing to the absence of cultivation in the plains, they were even still more dependent on the supply of jungle food than they are at present.

In those times their axes and their implements for grubbing up roots, were in all probability made of stone, and their arrows had tips made of the same material.

Owing to the timidity of the Kheriahs, I have not had many opportunities of speaking to them ; frequently, on my approach to a house, the whole family fled, and hid themselves in the jungle, at other times I have found the houses empty, all the family having gone out into the jungle to collect food.

On several occasions, however, I have had the men brought into camp, when I have questioned them as to their language and customs ; in this way I have formed a vocabulary which, however at present in a crude state, I hope to have further opportunities of testing its accuracy, and correcting it by the elimination of words of Bengali and Hindi origin.

In their persons, the Kheriahs are very dirty, seldom if ever washing themselves. Their features are decidedly of a low character not unlike the Bhúmij ; but there seemed to me to be an absence of any strongly marked type in their faces or build, such as enables one to know a Sonthal, and even a Kúrmī, at a glance. They undoubtedly belong, however, to the races who excited so much disgust on the part of the Hindus, when they first came into the country, and whom the author of the 'Annals of Rural Bengal,' quoting from the Sanscrit, calls in language probably more appropriate when first written than now, "The black-skinned, human-sacrificing, flesh-eating, forest tribes."

Some conversation ensued in which Dr. D. B. Smith, Mr. Woodrow, Dr. Ewart, and Mr. Ball, took part.

The Natural History Secretary read the following :—

II. *Notes on rare and little known Malayan mammals and birds*, by Dr. Maingay.

1. *Gavæus Gaurus*.

The first specimen I bring to the notice of the Society is one of a frontlet of the Malayan bison, an animal well known to the Malays under the name of *Sladang* and described as of very large size, and more formidable when wounded than the tiger. It is found in the dense jungles around the base of Mount Ophir and the Kambou hills, and, no doubt, extends along the bases of the hilly ranges which form the axis of the Peninsula, as far as Tennasserim or Burmah.

It must not be confounded with the *Bos Sondaicus*, also found in similar localities and distinguished by the Malays under the local name of *Sapi* or *Sapiontan*. The *Sladang* is now very rarely found within the Malacca territory, and the animal from which the frontlet was taken, was the only one of which I have been able to obtain any record as having been killed within the British boundary for the last thirty years. It was a very old solitary male, and was wounded by a Malay, who immediately on firing ran away, and the body of the animal, in an advanced stage of decomposition, was found, some days after, at a distance from the place where it had been wounded. Not being able personally to visit the spot, I only succeeded in procuring the frontlet.

The measurements* in my specimen are as follows : Between the tips of the horns, 21 inches ; breadth of forehead along frontal ridge, $9\frac{1}{2}$ inches ; circumference of horn at base, $15\frac{1}{2}$ inches ; from base to tip round outer curve, $23\frac{1}{2}$ inches. I have also measured a pair of horns, at present in the possession of a gentleman at Malacca, which measure no less than $28\frac{1}{2}$ inches along the outer curve, with a longitudinal diameter of 7, and a transverse one of $3\frac{1}{2}$ inches, or exactly 2 to 1.

2. *Pelicanus Phillippensis*, apud Jerdon, Birds of India.

This is the only form of Pelican I have as yet met with in the Straits—I refer to the above species as described by Jerdon ; it generally appears in large flocks and at irregular intervals.

The following are the notes and measurements drawn up from two specimens, male and female, in my own collection.

* See Dr. Jerdon's Mammals of India, p. 303.

Irides clear pale brown, paler at the inner and outer edges, and surrounded for a fourth of an inch by an injected red sclerotic, which becomes white posteriorly. Bill from 12 to 13 inches long, measured along the central ridge of the upper mandible, which ridge is pale flesh colour, with the lateral expansions deeper in colour and marked with a series of leaden black or purplish subquadrate oblique maculæ in either a single or, towards the base, a double row. Nail arcuate, dull yellow. Lower mandible greyish flesh colour, becoming orange towards the tip. Gular pouch, when lax, very pale slate colour, anteriorly with orange caruncles towards the base; when stretched, of a lurid flesh colour with well marked veins. Legs and feet dull slate colour, or bluish flesh colour. Claws whitish lead colour, paler towards their tips. Total length from tip of lower mandible to tip of tail, $4\frac{1}{2}$ feet. Wing 21 to $22\frac{3}{4}$ inches, with the 3rd and 4th quills longest, and the 2nd shorter than the 1st. Tarsus $3\frac{1}{10}$ to $3\frac{1}{2}$ inches. Middle toe, including claw, 5 to $5\frac{1}{2}$ inches. Inner toe, including claw, $5\frac{1}{2}$ inches. Outer toe 5 inches.

The species does not breed in any part of the Peninsula with which I am acquainted. It perches though rarely upon very lofty trees, and a similar habit has been noticed by Griffith in the Pelican of the Wheels of Eastern Bengal, but its usual roosting place is at sea. The Malays term it "*burong Jawa*," literally *bird of Java*. The marks on the bill occurred in every specimen which has passed under my observation.

3. *Limnaetus alboniger*, (Horsf. ?)*

[*Spizaetus cristatellus*, Jardine and Selby, in more advanced plumage than the very young individual represented in the ornithological illustration of those authors.]†

This bird settles a point long in dispute, namely the identity of

* Horsfield (Cat. of Birds, I. p. 33) quotes ? *Nisaetus alboniger*, Blyth, as identical with *Spiz. caligatus*, and *Spiz. cristatellus*, Temm., as a distinct variety of the same, but I cannot find the reference to *Lim. alboniger*, Horsf.—NAT. HIST. SECRETARY.

† Jardine and Selby's (Ornith. II. p. 66) *Spizaetus cristatellus* is described from a specimen, said to have been shot by the Captain of a vessel about to enter the port of Aberdeen. The forehead of the specimen is whitish, the rest of the upper plumage brown, below and sides of neck white, tail greyish with 7 black bands. Jardine and Selby supposed this specimen to be Temminck's *Falco cristatellus*, in the adult state; this is however not the case, as may easily be seen from a comparison of the description of the last species in Dr. Jordon's work.—NAT. HIST. SECRETARY.

Spizaetus cristatellus of Jardine and Selby above quoted. I possess in my own collection a single specimen of the latter exceedingly rare bird, which agrees with the description and figure in every respect. The specimen* I present to the Society, shows a more advanced stage of plumage, one exactly intermediate between *Spizaetus cristatellus* and *Limnaetus alboniger*, Horsf., if I understand the latter aright as a smaller form than *Kieneri*, but like it at once recognisable by the deep shining black of the back in old birds, and the rufous tinge of the breast and abdomen.

The species must be considered as very rare, even at Malacca as I have only met with five specimens within a period of more than four years. Of other *Limnaeti* I may mention the following in my collection:—

Limnaetus niveus, always showing the fawn-coloured bands on the thighs, as noted by Jerdon.

Limnaetus alboniger, Blyth, (Asiatic Society, Journal, 12th July 1845,) closely banded on the thighs and flanks with narrow transverse black bands, and with the back and crest black, the breast being marked with large black drops.

Limnaetus ? sp. of a dark hair brown colour on the back and with the belly, flanks and thighs showing narrow transverse brown bands. Both the last mentioned species are so rare, that I have met with only a single specimen of each.

4. *Hydrocissa n. sp.*

I met with this fine hornbill, for the first time since I have been in Malacca, only last December, when, singular to relate, it suddenly appeared in large flocks along the coast, and from the direction of the flight, I imagine the birds must have crossed over from Sumatra. They remained about a month, during which period several living examples passed through my hands. The Malays declared the birds had not been seen in Malacca for twenty years, and so far as my own forty years' experience goes, I can corroborate their statements. They have

* This specimen is certainly a typical *Limnaetus Kieneri*, de Sparre, (Jerdon's Birds of India, I. p. 74). *Lim. cristatellus* of Temminck, is certainly quite distinct from this, and likewise quite distinct is *Lim. caligatus*, Raffl. (*Lim. alboniger* Blyth), being easily distinguished by the large dark blotches to the white feathers of the breast, and by the white banded belly and thigh coverts. I would be very interesting to examine Dr. Maingay's specimen which he believes to agree in every respect with Jardine and Selby's description and figure.—NAT. HIST. SECRETARY.

since all disappeared as mysteriously as they came, and I have not met with any for the last three months. I am quite at a loss to account for so singular and unusual a migration, and the only plausible conjectures are : either that it was produced by a very unusually strong monsoon, or from a failure in the supply of fruits. So bold and fearless were the birds on their first arrival, that a few actually roosted, out of gun shot, however, on a very lofty and bushy *Pterocarpus* tree, within the precincts of the town.

The following descriptions were taken from living individuals of both sexes.

♂. Body and wings shining black, occiput with four inches of the dorsal surface of the neck black, the feathers slightly elongated. Throat, sides and a small ring at the root of the neck white, verging when in contact with the black neck patch into yellowish or even deep shining rufescent, though this last character is not always well marked. Tail black at the base, for about a third, the remaining two-thirds pale chrome-yellow. Skin round the orbits splendid clear blue. Gular pouch pale yellowish white. Irides a very clear dark brown approaching to crimson in certain lights. Bill in the upper mandible whitish at the tip, gradually becoming yellow towards the centre, and crimson for about one inch from its base. Casque crimson throughout, with four or more vertical shallow depressions anteriorly, its anterior edge inclined obliquely from behind forwards. Distal half of the lower mandible from the tip yellowish white, becoming clearer towards a very narrow black basal band, and marked with 4-8 linear curved grooves, extending from behind forwards. Feet dull lead colour ; length of dried specimen, 2 feet $9\frac{1}{2}$ inches ; length of wing, $15\frac{1}{2}$ inches ; of tail, $10\frac{1}{2}$ inches ; of tarsus, $2\frac{1}{2}$ inches. Bill at gape, $6\frac{3}{4}$ inches.

♀. Body black throughout, except the distal $\frac{2}{3}$ of tail which are of the same pale chesnut or creamy yellow as in the male. Bill throughout dirty yellow, becoming brownish or reddish brown for about half an inch from the base. Casque with a sharp anterior edge, inclined from behind slightly forwards, without the shallow grooves found in the male, the lower mandible also wanting them.

Flight undulating, rapid. Habits gregarious, in flocks of from 5 to 8 individuals.

Should the species be undescribed, I propose the specific name *migratorius* for it. I possess a male with two miniature *white* feathers in the tail, shorter in length and placed underneath the others.

Malacca, March 26th, 1868.

III. *Notes on the Lion of Aboo, by Assistant Surgeon GEORGE KING, M. B., Bengal Establishment.*

I have collected the following particulars from various English sportsmen in this part of Rajpootana and from native shikarees, all of whom have seen or shot lions, and as there is a wonderful harmony between the different accounts, I think they may be relied on.

Both to Rajpoot and Bheel shikarees in these parts, the lion is known, under the name of *Untia-bágh* : in Kattiawar, where it also occurs, it goes under the name of *Sáwach*. It is now beginning to get scarce in its old haunts in the jungle at the base of Mount Aboo and in the neighbouring plains, but whether from extermination or from migration, it is difficult exactly to say. I am inclined to think that the latter has a good deal to do with it. Having recently been stationed at Goonah in Central India, near which six or seven lions were shot in one season some years ago, I can bear testimony to the fact that the appearance of the animal there, was quite a surprise to both the European and Native sportsmen of the district, and that since that year not one has been seen. The news of the first, as observed at Goonah, was brought into the station by a native who described a large unknown tiger-like animal which had been seen to kill a kid near a neighbouring village. A party went out quite uncertain as to what large animal they could be going after, which had condescended to kill such small game as a kid. In the beat that followed, a lion was turned out and killed—a poor enfeebled specimen in very bad condition, and bearing the marks of numerous bites and tears,—which in the opinion of the shooters had probably been inflicted on him by the tigers into whose preserves he had intruded. Shortly after that, in other beats in the neighbourhood of the station, lions were turned out, and during the season, as just mentioned, six or seven were shot. One was seen to escape by swimming across a wide nullah. Lions have since been shot west of Goonah near Kotah, and in the jungle between the latter place and Gwalior, two

or three were shot so lately as the hot weather of 1867. During a march in December last from Goonah to Jodhpore through Kotah, Boondee and Harowtee, I made particular enquiries, as I went along, as to the occurrence of the lion, but could discover nothing to lead me to think that it is a common animal in the Kotah or Boondee jungles, nor even a permanent resident there; but perhaps the natives do not distinctly distinguish it from the tiger.

The lion is higher at the shoulder but shorter in the body than the tiger; in other words, comparing a lion and tiger of equal weight, the lion would be higher than the tiger, and the tiger larger than the lion. The head of the lion, even allowing for the deceptive appearance of size given by the mane of the male, is slightly larger than that of the tiger. A very fine large male lion shot near Aboo last year, measured, without stretching, forty-two inches in height at the shoulder, and ten feet and half an inch from the tip of the nose to the end of the tail. The hair of the mane was ten inches long.

The lion has never the sleek coat, nor rounded form of the tiger, but is invariably lean and lanky. His ribs can be distinguished under the rough skin, and as he walks, the movement of the shoulder-blades is very distinctly seen. The forelegs and all the feet are more massive than those of the tiger. The large size of the feet is particularly well marked in the young, the footprints of a lion cub of twenty-four months being nearly as large as those of a full grown tiger, but distinguishable from the latter by their greater lightness, as well as by their shape. The contrast in size between the footprints of adults is not so great, the lion's being but little larger than the tiger's, but distinguished from the latter by the rounder outline, as if the lion walked more on the tips of its toes than the tiger.

The colour of the lion differs with age, but at all ages the belly and legs are lighter than the back. The general tint is a sandy yellowish dun, much like that of the camel. In the young the colour is very light, and the legs and sides are particularly so, while the belly is almost white. On the light parts, there are very faint spots of a darker shade, in size about equal to a rupee.

The testicles are small but prominent, and are set high up just under the anus; the penis is like that of the tiger.

Unlike the tiger, the lion is rarely if ever seen in the hills at any

season. In the hot weather, lions frequent the banks of dry streams where the jungle is thick and scrubby, and during the day a very favourite cover near Aboo is in the dry sandy beds of streams where jaw jungle abounds. "Jaw" is the native name given indiscriminately to a species of *Tamarix*, and to *Trichaurus ericoides*, both of which grow freely, and form a dense cover from 4 to 6 feet high. If not disturbed, they often lie very near villages. They have been known to haunt, for months at a time, high retired bare open spaces on the plains near Aboo where there are only a few patches of jungle sufficient to afford them cover from the sun. In the hot weather of 1867, four were shot near the village of Gole. They had lived there for three years, and during that time had done great harm among the villagers' cattle. On the night of the arrival of the party that shot them, they killed four cows.

Lions are easier to beat out of their cover than tigers. In the matter of courage the two species are very much alike. They feed principally on wild pig, deer, and cattle, but are very fond of camels.

The lioness has never more than three, and usually only two cubs. At parturition she lies up separately like the tigress. The young remain with their mother for four or five years. They are said not to attain their full size until their sixth or seventh year.

Aboo, 30th May, 1868.

IV. Notes on a supposed new species of *Drymoipus Verreauxi*, Lieut.-Col. R. C. TYTLER.

Col. Tytler in a letter to Mr. A. Grote (dated Umballah, 2nd May 1866,) forwards the description of a supposed new species of *Drymoipus*. He writes as follows:—

'In my fauna of Dacca which was published several years ago I mentioned a new species of bird (*Megalurus*), I had found a station, but no description of this bird as yet appeared. I am inclined to believe, it is more a *Drymoipus* than a member of that genus. The following is a short description of the species.

Length $6\frac{1}{2}$ inches, wing $2\frac{1}{2}$ inches, tail 3 inches, bill at top nearly 1 inch, tarsus 1 inch. Head, neck and back black with light brown lower portion of back light chestnut brown. upper tail coverts black feather edged with chestnut brown, tail dark slate brown, ear

in the centre, and closely marked with faint bars, and with a terminal band; chin, cheeks, throat, breast, abdomen and under parts white, rufous on the flanks and thighs, wings brown, with centres to wing coverts, secondaries and tertiaries; quill feathers edged outwardly with light brown. Bill, feet and claws, light eyes dark, under wing coverts albescent. There appears to be no difference in the colour of the sexes; if anything, males are a little brighter.

I found this bird in long grass at Dacca, where it was far from common, and I obtained very few.'—

If the species prove to be new, Col. Tytler suggests naming it in honour of his friend T. Verreaux of Paris; but Dr. Jerdon is of opinion that it is probably his *Graminicola Bengalensis* (See "Birds of India" Vol. II. p. 177). The changes in the plumage of the various species of SYLVIDÆ and allied families, are still very imperfectly re-

Notes on new Gastropoda from the Southern Provinces of Ceylon; by Messrs. G. and H. NEVILL. [Abstract.]

In this paper, the following new species have been described:—

1. *Oxynoe cincta*.
2. ,, *delicatula*.
3. *Cylindrobulla sculpta*.
4. ,, *pusilla*.
5. *Lobiger viridis*.
6. *Delphinula tubulosa*.
7. *Broderipia eximia*.

The five first named species belong to the interesting division GASTROPODA, and the two last ones to the SCUTIBRANCHIATA of GASTROPODA.

The President then exhibited to the meeting one of the rude instruments for approximately determining their latitude, used by the crews of native coasting vessels, between Calcutta and Ceylon.

He said, "While visiting the coast in the early part of the present year, among other matters, I was interested in endeavouring to ascertain whether it was that the commanders of native vessels, some of fair size, are in the regular habit of passing from port to port along the

coast, succeeded in navigating these vessels. They are for the most part uneducated natives of the country. They are entirely unacquainted with such instruments as are generally in use for determining the position of a vessel at sea. They have no chronometers, and no sextants. Indeed being strictly coasting vessels, they do not leave sight of land, unless, as is not unfrequently the case, they are compelled by stress of weather to do so. On enquiry I found that they used a very ingenious but rudely simple means of obtaining approximately a knowledge of their latitude, when thus driven from shore. They do not care for any knowledge of their longitude, and never think of this.

The little contrivance which I now exhibit, consists simply of a small rectangular thin board or piece of teak-wood. The one I have measures $3\frac{1}{2}$ inches long by $2\frac{1}{2}$ inches broad, and is about $\frac{1}{8}$ inch thick. Through a small hole in the centre of this, determined by the intersection of the diagonals, a fine cord is passed, about the thickness of fine whipcord. The use of this little instrument depends upon the fact that the latitude of any place is roughly the same as the angle of elevation above the horizon of the polar star, and that any opaque object held vertically before the eye subtends an angle, which varies inversely as the distance of the object from the eye. If this distance be constant, and the size of the opaque object constant, the angle subtended by it must be constant also. Knowing this, the application of contrivance I hold in my hand is simple. The small rectangular board is held firmly in the left hand, while the cord from its centre (held in the right hand), is stretched from it to the eye, where the fingers of the right hand are held. As this cord, or the distance from the eye to the small rectangular board, is increased or diminished, so is the angle subtended by the opaque board, lessened or enlarged. Well, say the Captain of one of these coasters is anchored at Vizagapatam, on the coast, he takes advantage of a clear night, and sitting on the deck of his vessel, he carefully brings the line of the lower edge of this small rectangular board to coincide with the line of the horizon, or sea line, and moves the board slowly back and forward, until he brings the line of the upper edge to correspond with or to intersect the polar star. Carefully marking the length of the cord passing from his eye to the board, when this is the case, he puts a knot on the cord at that point.

If this be carefully done, he knows that whether near the coast or far from it, if he be in such a position that the horizontal line and the polar star coincide with the two edges of the board, while that board is held vertically before his eye at the distance indicated by the knot, that he must be in, or close to, the same parallel of latitude as the port at which the first observation was made. It matters not to him whether this be, in our mode of recording the latitude, 10° , or 15° , or 20° —all he cares to know, in his rude navigation, is that he is about the same parallel, and that if his destination be north or south of that port, he has only to steer accordingly.

Similar observations being repeated at other ports, marks or knots corresponding to these are placed at the proper distances on the cord. These lengths have been determined now by innumerable separate observations, and these substitutes for sextants can be, I am told, purchased with the knots or marks all ready. Careful men test these again, quite as a European Captain would carefully ascertain the Index error of his sextant for himself, however admirably constructed it might be.

I am told that a careful man will determine his latitude, as referred to the fixed points or ports on the coast, within 10 to 15 miles, by this very rude substitute for a sextant.

I am indebted to the kindness of Stuart Hall, Esq., of the firm of Hall and Syme, Coconada, for the possession of the one I now exhibit. The names of the several ports along the coast are written, or rather incised, on the board in Telugu characters, corresponding in order and number to the knots and marks on the cord. These are 14 in all: the more important, Godavery, Madras, Negapatam, are marked on the end by little tufts of coloured cotton thread, red, blue, white. The specimen before the meeting had been in actual use for some years."

The President also exhibited to the meeting a very interesting and valuable addition to the collection of Meteorites, in the Geological Museum. This was a beautiful specimen of the fall which occurred near Pultush, about 35 English miles from Warsaw, on the 30th of January in the present year. Several stones fell—the largest is in possession of a private party, the second largest went to the Imperial Mineral collection at St. Petersburg, and the third

largest was secured for the Imperial Mineral Cabinet at Vienna. It had been cut for examination, and Dr. M. Hornes had, with his wonted liberality, sent to Mr. Oldham the specimen now exhibited—the second in size of the three pieces into which the whole was divided. It weighs 6 oz. 398 grs. The stone sent to Vienna was perfect, that is, it was covered on all sides with a distinct crust tolerably uniform, and about $\frac{1}{16}$ th of an inch in thickness. The stone, as seen by the fresh fracture and polished surface, belongs to the same general group as several other well known falls. These are all grey, more or less dark, coloured brown locally, with more or less globular portions distinguished from the rest of the mass by a nearly black colour with much finely divided Iron, a little Pyrites, and probably Troilite. This stone (Pultush) is very similar to that which fell at Gross Divina, Hungary, on July 24th, 1837. The specific gravity is 3.660.

The stone belongs to the third class, *sporadosidères*, and to the second subdivision of that class, *oligosidères*, of Profr. Daubrée's classification—

The receipt of the following communications was announced :—

1. *The History of Burma*, by Col. Sir A. PHAYRE.

Col. Phayre's paper is a continuation of that published in the 32nd volume of the Journal of the Society. In that paper, the author traced the history of the Burma race from the earliest times to the arrival of the two sons of the king of Tagrung at the site of the present town of Prome. The national chronicles from that time proceed with the history of the monarchy established at Tha ré Khél ta rá, to the east of Prome. In the present paper, the author condenses into a brief narrative the principal events of that monarchy and of the succeeding dynasties of Burma kings, which reigned at Pagán, on the Irawaddy river, about 180 miles above Prome.

2. On some new species of *Gastropoda* from the Southern Provinces of Ceylon, by Messrs G. and H. Nevill.

3. *Authors of Armenian Grammars, from the earliest stages of Armenian Literature up to the present day*, by J. AVDALL, Esq.

LIBRARY.

The following additions were made to the Library since the meeting held in July last—

PRESENTATIONS.

. The names of Donors in capitals.

Bráhma dharma.—THE CALCUTTA BRAHMA SAMÁJA.

Bráhma dharma, with commentaries.—THE SAME.

Bráhma dharma, in Nágarí characters.—THE SAME.

Bráhma dharma Vyákhyána.—THE SAME.

Bráhma dharma mata o Visvása.—THE SAME.

Dharma charchá.—THE SAME

Dharma síkshá.—THE SAME.

Prátyahika Bráhmopásaná.—THE SAME.

Brahma stotra.—THE SAME.

Prárthaná.—THE SAME.

Atmatattva vidyá.—THE SAME.

Panttalika pravodha.—THE SAME.

Tattva vidyá, part I.—THE SAME.

Anushthána paddhati.—THE SAME.

Pravachana Sangraha.—THE SAME.

Mághotsava.—THE SAME.

Bráhma Samája Vaktrítá, 3 Nos.—THE SAME.

Vedantic Doctrines vindicated.—THE SAME.

Selections from several books of the Vedanta by Raja Ráma-mohana Ráya.—THE SAME.

Several Tracts on Hindu Theism.—THE SAME.

The Signs of the Times.—THE SAME.

The Theist's Prayer-Book.—THE SAME.

The Doctrine of The Christian Resurrection—THE SAME.

Proceedings of the Royal Society.—THE ROYAL SOCIETY OF LONDON.

Journal Asiatique, No. 40.—THE ASIATIC SOCIETY OF PARIS.

Bulletin de la Societé de Géographie; Mai, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Proceedings of the Academy of Natural Sciences of Philadelphia for 1867.—THE ACADEMY.

Journal of the Academy of Natural Sciences of Philadelphia, Vol. VI. part II.—THE SAME.

Les Manuscrits Lampongs en possession de M. le Baron Sloet van der Beele, publiés par H. N. van der Tuuk.—THE AUTHOR.

Records of the Geological Survey of India, Vol. I. part I.—THE
SUPDT. GEOL SURV. OF INDIA.

Another Copy.—THE GOVT. OF BENGAL.

Palæontologia Indica, Vol. V. part 6.—THE SAME.

Annual Report of the Lahore Lunatic Asylum for the year 1867.—
THE SAME.

Report on the Police of the town of Calcutta and its suburbs for
1867.—THE SAME.

Note on the importance of the Spectroscopical Examination of the
vicinity of the Sun, when totally eclipsed, for the determination of the
nature and extent of its luminous atmosphere, and on the parti-
identity of that atmosphere with the Zodiacal light. By Prof. E. W.
Brayley.—THE AUTHOR.

A lecture on the life of Rámadulála De, by Girisachandra Ghosa.—
THE AUTHOR.

The Calcutta Journal of Medicine, Vol. I. No. 6.—THE EDITOR.

Padmadúta Kavyam by Siddhanáta Vidyávágisá :—COL. J. C.
HAUGHTON.

Addresses delivered at the Hitoishini Samája of Cutch Vehara.—
THE SAME.

Prasannarághava Náta, edited by Govindadeva Sastri.—THE
EDITOR.

Grammaire Polyglotte, par Le P. Minas Mélici.—J. AVDALL, Esq.
PURCHASED.

Reise Seiner Majestät Fregatte Novara um die Erde, Botanischer
Theil, Band I. Algen.

Revue et Magazin de Zoologie, No. 4, 1868.

The Annals and Magazine of Natural History, No. 6, 1868.

Journal des Savants, Avril, 1868.

Comptes Rendus, Nos. 16—21, 1868.

Revue des Deux Mondes, 15th Mai, 1st June, 1868.

Revue Archeologique, V. 1868.

Revue Linguistique, Avril, 1868.

Les Quatrains de Khéyam, traduits du Persan par J. B. Nicolas.

Visible Speech, the Science of Universal Alphabetics, by A. M. Bell —
EXCHANGE.

Athenæum, for May, 1868.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR SEPTEMBER, 1868.



A Meeting of the Society was held on Wednesday, the 2nd instant, at 9 o'clock P. M.

T. Oldham, Esq., LL. D. President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations have been received since the last meeting.

1. From Dr. G. King—

A skeleton of a lion.

2. From the Minister of Foreign Affairs, Paris—

A copy of Collection Orientale, Le Livre des Rois, Vol. VI.

3. From Maulavi Muhammad Zuhúrulhaq—

A copy of the Díwán-i-Sultán.

4. From the author—

Two copies of a pamphlet, entitled *Statistics of Longevity, No. II.*, by Captain T. C. Anderson, Garrison Barrack-Master, Fort William.

The following gentlemen duly proposed and seconded at the last meeting were balloted for, and elected as Ordinary members :—

Baron von Ernsthausen.

R. M. Adam, Esq.

E. Ch. van Cutsem, Esq.

R. V. Stoney, Esq.

C. Lazarus, Esq.

The following gentlemen are candidates for ballot at the October meeting :—

W. Eldowes, Esq., M. D., Assistant Surgeon, Erinpura Irregular Force.

Proposed by the President, seconded by the Secretary.

Dr. S. M. Shircore, Civil Surgeon, Twenty-four Pergunnahs.

Proposed by Dr. Partridge, seconded by the Secretary.

In accordance with the notice given at the last meeting, A. Grote Esq., was balloted for and elected an Honorary Member of the Society.

The election of H. Blochmann, Esq., as General Secretary of the Society, reported at the last meeting, was confirmed.

The President said that while the ballot was proceeding, he would submit for the inspection of the Society, a magnificent specimen of Meteorite, which he had recently received. This was a portion of the known fall which took place at Klein Menow, near Fürstenberg Mecklenburg-Strelitz, on the 7th October 1861, in the day time, about half-past one o'clock. The stone, as it fell, was tolerably perfect being coated in most places with the usual vitreous crust. This, the present fall, was much more rough and irregular than was usual. The stone was purchased entire by Baron Reichenbach, who then was forming a fine collection of these objects, and it has since then remained with him. He declined to cut it, so as to allow other collections to have portions. More recently he has been anxious to dispose of it, and about the beginning of the present year, it passed into the hands of Wm. Nevill, Esq., Godalming, whose collection of Meteorites is known to all interested in these enquiries, as the finest private collection now existing. Indeed his series will rank fourth or fifth among all collections, either public or private. To the kindness of Mr. Nevill, he was indebted for this splendid specimen, which is about one-third of the whole mass. As yet he had only been able to examine the polished surface of the mass where cut—and it is not easy to determine the exact structure of the fall in this way. The members would see the appearance it presents. Round sub-angular and occasionally globular-looking masses of a darker colour are irregularly scattered through the mass of the block, which consists of a kind of net work of iron. The mass is magnetic.

From Mr. Nevill, he had also received a specimen of the rarest of all known meteorites hitherto only known to be represented in his own collection and in that of the British Museum. The only known fragment originally belonged to the Lettsom collection which passed into Mr. Nevill's hands, and was divided with the British Museum.

The fall he spoke of is that which took place on the 17th May, 1830, at Perth in Scotland.

The President also said, he had brought to the meeting, thinking it might interest some of the members, a series of beautifully executed models of the most celebrated large diamonds, known to exist. These models are very well executed, and give an excellent idea, both of the size, brilliancy, colour, &c., of these valuable stones.

The President then said that, subsequently to the last meeting of Council, he had received communications on a subject which was of great local as well as general interest, and which had been the source of a good deal of intellectual excitement recently, he alluded to the recent total Eclipse of the Sun, which, as the members were aware, had occurred under conditions as to the relative positions of the Sun, Moon and Earth, nearly as favourable as could possibly be. An unusually protracted continuance of the totality of the Eclipse was the result, and consequently great preparations had been made for the careful observation and record of the facts. Coming in the middle of the Monsoon there was, of course, a very great probability that the sky would be so covered with clouds, that nothing would be seen, as was very much the case in Calcutta. But there were chances in favour of success, and these have been fully seized. The matter was one of such immediate interest, that he had exercised the authority granted to him and, anticipating the consent of the Society, he had arranged that these papers should take precedence of the papers announced for the meeting. If time permitted after the reading of the communications on the Eclipse, they could proceed to the other papers. Col. Gastrell would read a paper by Captain Tanner, and then he would ask Major Macdonald to read his notes.

Remarks on the Total Eclipse of the eighteenth of August, 1868, as observed at Beejapoor, situated in E. Long. $75^{\circ} 50' 15''$ Lat. $16^{\circ} 49' 35''$ N. and 16 miles north of the central line of eclipse.—BY CAPTAIN TANNER.

The morning of the 18th August broke dark and cloudy at Beejapoor, and the high wind, which had prevailed for several days previously, had in no way abated.

We took up our position on a lofty tower some 70 feet high, one of the numerous ruins of this far famed ruined city. From this altitude, we could obtain a commanding view of the whole surrounding country, a position most favourable for observation of the general phenomena of the eclipse. I selected a spot near the top of the external spiral staircase of the tower, protected entirely from the wind, and where I could make my observations in a comfortable and easy attitude.

Our party was composed of Captain Haig, R. E., G. T. S. ; Professor Kern Luximun, M. A. of the Dekhan College, Mr. Hunter, C. S. ; and Kielhorn of the Dekhan College, and myself.

Captain Haig was furnished with one of the Royal Society's Spectroscopes. He had fitted this instrument to one of my 6 inch transit Theodolites, in order to command greater magnifying power than he had with the telescope of his spectroscope. Professor Kern Luximun had a $2\frac{1}{2}$ in. telescope of 30 in. focal length, which was equatorially mounted. His instrument was furnished with an eye-piece of 46 power, possessing a scale, or micrometer with which he intended measuring the altitudes of the red protuberances.

The high wind, however, unfortunately overturned the instrument and so much disarranged it, that he had to substitute a power of 100 instead.

I had a 10-inch Theodolite possessing a remarkably good telescope of $1\frac{3}{4}$ in. aperture, and 18 inches focal length ; with an eye-piece of 46 power. I had intended observing with a telescope of 3 in. aperture, but it did not arrive from Nimar in time before I left Poonah.

Kern Luximun had previously determined the error of our chronometer, which was verified by an independent observation by Captain Haig and myself, in the afternoon, and we thought we were well prepared for the coming event ere the 1st contact took place. From some mistake in applying the error of the chronometer, or from some other cause, the first contact took place before we expected it, and I was the only one of the party ready to note the event. Owing, however, to clouds, I was prevented observing the exact instant which it occurred, and my observation must have been some 40 seconds late. I made a sketch of the segment of the sun, obscured by the moon at the instant of my observation, and by applying it to a diagram previously constructed by Kern Luximun for this purpose.

estimated that the 1st contact had taken place about 50 seconds before my observation. Afterwards, by comparing the segment with a similar one at the time of last contact, I estimated the time to be about 35 seconds, we therefore adopted the mean of these estimated times as the instant of first contact.

The sky now remained for a considerable time over-cast with cirro-cumuli and fast flying nimbi, but we occasionally obtained views of the progress of the moon across the sun.

The light except near the time of totality waned imperceptibly, and when even as much as $\frac{7}{8}$ ths of the sun's disc was hidden, there was hardly any diminution in its intensity. During the last few seconds before totality, the light gave way very suddenly. I saw darkness approaching rapidly from the west, where the gloom appeared like a vast black thunderstorm. It was on us in a few seconds; clouds had hidden the sun just previous to his total obscuration, and from their density and extent, we almost gave up hope of seeing any of the interesting phenomena we had come so far to observe. Kern Luximun, however, noted approximately the time of commencement of the total phase. I myself was unwilling to believe that the totality had actually commenced, so incomplete was the darkness. At this time and throughout the total phase, it was remarkable that we could see to read and write in pencil, could take observations and read the second's hands of our watches with great ease. The light in the eastern sky was noted by me to be fading at 9. 3. 20 M. T., and had completely disappeared in 25 seconds. We were now enveloped in a dense leaden gloom which overspread the whole expanse of country visible to us. There was nothing remarkable about the colour of the sky or clouds, the darkness was that of ordinary twilight early on a dull grey morning.

Shortly after the time of greatest obscuration, light began to break in the western sky (a small patch free of cloud being visible), and presently we caught a view of the eclipse through the upper thin stratum of cirro-cumuli. So bright was the corona immediately around the moon's limb, that for a moment I was under the impression that the eclipse instead of being total was only annular. Its light died away completely at a distance of half the moon's diameter. It appeared to me and to Professor Kern Luximun to be quite regular

and evenly, and softly shaded off all round. But Captain Haig fancied that he detected some slightly marked radiating lines in its structure. The eclipse being now quite clear, we commenced observations with our different instruments. At my first view of the moon through my telescope, three red prominences met my gaze. The one marked *a* Plate IV., at my first hurried glance appeared to be sharply defined pointed, and of homogeneous composition. I immediately made a sketch of it. The double flat broad protuberance marked *b*, appeared as depicted on the sketch to be composed of well defined hard streaks or lines slightly radiating. The Professor afterwards aptly likened them to the fingers of the hands slightly separated: each part of this double protuberance being composed of perhaps 6 to 10 such fingers or lines. I then sketched them and casting my eye round the moon's limb again, to see that no others had escaped notice, returned to examine the flame *a* more minutely.

I found it to be composed of streaks of flame-coloured matter, not lying parallel or nearly so, to each other as in spot *b*, but overlapping and somewhat twisted one upon another, precisely as the large flame of a burning mass of inflammable matter is composed of smaller tongues of fire: the streaks being, however, rather finer in proportion than the tongues of fire to which I have likened them. They were of a darker colour than the groundwork of the protuberance, and were more of a dark blood-red than I have shewn it in the sketch. The edge of the protuberance was ragged, being composed of the ends of the streaks just described. I now made a larger and more detailed sketch of this protuberance, and again returned to the telescope, when I found that another small red spot had in the meantime appeared. I marked it at *c*₂, and Professor Kern Luximun at *c*₁. After noting its position, I observed the general appearance of the eclipse, when in a few seconds the sun burst forth from behind the moon. The sudden contrast between the deep twilight of the total phase and the sunshine imparted even by so small a portion of the sun's disc as was at first visible, made it appear to us all that the light of day was complete.

At the first appearance of the limb of the sun, the red prominences all disappeared from my view, but Kern Luximun noticed them two minutes after that event. We now, aided by our rough original sketches, and our memory, each made another diagram, showing the position, shape, and structure of the protuberances. The manner in

which these representations of the eclipse bore comparison with each other elicited an exclamation of surprise from Dr. Kielhorn. The comparison shewed as follows :—

Protuberance *a* was shewn by the Professor straighter and not so pointed as by me. The streaks composing its body, the angle at which it met the moon's limb, and its height and position corresponded very well. The position, structure, and height of the double spot *b*, the same in both sketches.

The spot marked by the Professor at *c*₁ was noted by me at *c*₂. I am inclined to give way to the position he has assigned to this prominence, as I believe that in my hurry I may have marked it in an inverted position with regard to the double spot *b* ; it may be remarked that we have both placed it at the same distance from *b*.

Captain Haig after just glancing at the sun through his telescope, and satisfying himself as to the existence of red flames, proceeded at once to examine them, and the corona with his spectroscope. The latter though most markedly visible to the naked eye gave but a faint continuous spectrum, whereas the red flames although totally invisible to unaided sight, shone out brilliantly and conspicuously across the dark disc of the moon.

Captain Haig's report to Colonel Walker fully describes his observations, which he hopes will corroborate those of other observers who have been furnished with complete apparatus for analyzing the constitution of the corona and red flames.

Kern Luximun and I are almost unfortunate in being perhaps the first observers to notice the streaky lined structure of the red protuberances.

I would therefore offer the following suggestions as to the probable or perhaps possible reason for our having noticed them.

When the sun is ordinarily observed on a bright warm day, the tremulous motion of the atmosphere so interferes with magnified views of sun-spots, that the minute markings of their structure are almost if not quite lost and obliterated. Now we observed through a single gap in the clouds. The earth and atmosphere had not been warmed at all by the sun's rays that morning, and we therefore saw the sun through a perfectly steady and homogeneous atmosphere, undisturbed and unbroken by heated tremulous vapour ; the streaks and lines composing the red protuberances were therefore seen by us distinct from

each other. In the double flame *b*, even the most careless observer could not fail to notice the radiating lines or streaks, and it only required ordinary care to detect the same phenomenon in *a*, the lines composing this, as before remarked, being finer and more minute than in *b*.

The red protuberance *c*, shewed no markings.

We judged from our sketches and from estimation that *a* attained about 2' of altitude. Professor Spurer of the German astronomical party who obtained a glimpse of about 4 seconds' duration of the total phase, judged this protuberance to be about 3' high. He had so short a time for observation that he mistook *b* for a single point.

I had an opportunity of comparing our small instruments with the magnificent ones furnished by the Prussian Government to their observers who unfortunately selected a spot some 15 miles from Beejapoor, whence the sun was invisible almost throughout the eclipse. My telescope bore the tests it was put to in a most satisfactory manner; its definition is surprising. On the morning of the eclipse, the sun spots as seen through my telescope, could have been faithfully depicted with the point of a fine etching pen; with the other telescopes I examined, the same spots would have to be drawn with a camel's hair pencil and shaded with indian ink. With the 46 power eye-piece Saturn's ring, one of his bands, and one of his satellites, are visible; the *fæculæ* on the sun, especially in the neighbourhood of spots, being clearly perceptible.

The following table shews our time observations :—

	Computed by Proff. Pogson.	Observed by us.	Diff. S.	REMARKS.
1st Contact,	7 50 54	7 50 25	29	Estimated by Captain Tauner's Observations.
Totality commenced,	9 2 9	9 1 49	20	Estimated by Kern Luxi- mun.
Totality ended,	9 7 21	9 6 59	22	Noted by Captain Tanner and Kern Luximun.
Last contact,	10 28 44	10 28 14	30	Noted by Capt. Haig and 2 seconds later by Capt. Tanner.*

* Captain Tanner's time was noted when a high, well defined mountain on the moon's limb left the sun.

Captain Haig's observation was made when this mountain was distinctly projected on the sun's disc.

The 1st contact was made very near the apex, and the last contact at a point 165 degrees from the apex counting round by the right. The computed places were 1st contact, 1° to right of apex, and last contact 173° from apex round by the right. We have not yet accounted for the discrepancies either of time or position.

Record of the Eclipse of the 18th August 1868, as seen from a hill in the vicinity of "Bezwarra" on the "Kistna" river, at latitude, $16^{\circ} 21' 10''$ North, and longitude $80^{\circ} 43' 20''$ East.—BY MAJOR J. MACDONALD.

The place of observation was well chosen. It commanded a view of the valley of the Kistna, which stream was then in flood, and covered the ground south-east of my station with water; this bright surface of several square miles was admirably suited to show the gloom of the shadow: to the west and north west the range of the "Condapillay" hills varying in height from 1000 to 1500 feet higher than my station, and distant about 12 to 15 miles, furnished a contrast in colour and outline, exactly required for the purpose of noting the difference of light on the landscape. North and east, the whole champaign was a field of springing rice, broken by small hills and dotted with groves. Thus I had a landscape adapted for every purpose I required.

That I might make a fair comparison with the degree of light during the period of totality with that of an ordinary twilight when the sun is under the horizon, I took up my post nearly an hour before sunrise, and carefully noted the prominent objects of the landscape, as they first appeared in the dawning light. These were numerous and varied, from distances of miles and thousands of yards to human features placed at distances of 30 to 10 yards from my station.

To sketch the appearance of the corona, I prepared a diagram showing the deep shadow of the moon; and for facility of comparison, I drew circles round the disc increasing from $\frac{1}{8}$ of the radius to $\frac{1}{4}$. Nine of these circles gave a space round the moon which I judged would be sufficient to show all the brightness of the corona.

Thus prepared, I took my station. I noted the temperature of a thermometer attached to the tripod of my telescope to be 96° in the sun, immediately before the commencement of the eclipse; and at 8-18 A. M., the moon's shadow crossed the light of the sun, and the eclipse

commenced. I supposed myself to be about 9 minutes north of the central line of eclipse, and calculated that I should have a period of totality equal to 5 minutes and a half.

I observed with a 120-power telescope by Dollond, through a double glass of red and brown. The power was sufficient to show the broken outline of the moon, and as totality approached, the bright lights on the high grounds in the moon were shown most beautifully on the illuminated edge of the moon's disc.

Interested by the account given in Major Tennant's paper as read by him before the Asiatic Society at Calcutta, regarding the observations made at Ragusa in March 1867, by Ensign Kiha of the Austrian navy through a cobalt blue glass, I tried to observe through a glass of bright Prussian blue; but when only ten minutes from totality, I found it impossible to look at the sun through such a pale colour. So it is inexplicable to me, how Ensign Kiha was able to look at the sun through a brighter colour under less favorable circumstances. During totality, I looked for 3 minutes through the blue glass, and thought the appearance of the corona and flames to be then infinitely more beautiful than when seen through the darker glass, or by the naked eye.

During totality, the mercury of the thermometer in the open air and attached to the telescope tripod fell to 83.5 degrees being a fall of twelve and a half degrees. A minimum thermometer, in the verandah of Colonel Winscomb's house, fell to 82°. Unfortunately the reading of the maximum thermometer placed in the same situation, could not be depended upon.

There was no appreciable change on an Aneroid Barometer during the progress of the eclipse.

With reference to my remarks on the light during totality, I will record a few of the facts from which I made my comparison.

First, I noticed hills left and right of the flooded valley of the Kistna at distances of three and four miles. They were discernible during the totality.

Secondly, A house painted with a light colour, overlooking the town of Bezwarra, was situated on the side of a hill distant about 2000 yards from my station. Two or three hundred feet higher up, on the face of the same hills, I noticed a precipice of dark rock. Both the light and dark objects remained visible.



Thirdly, I could distinctly see the roofs and walls of all the bungalows in the plain underneath me ; also the general outline of the town, the line of the Canal, and as a matter of course, the river beyond the town was clearly discernible ; the landscape in this direction varied in objects from 500 to 2500 yards.

Fourthly, Before the eclipse, I noted the colours of dark and white cattle grazing in a field immediately below my station and distant about 600 feet in a straight line from that spot. During totality, I could still recognise the difference in colour, and also distinguish a large white stone I had remarked in a field about 100 yards beyond the cattle.

Fifthly, In the middle of the totality, I could recognise the features of human beings up to 20 yards. I believe I could have recognised the features of a white person as far as 30 yards off.

Only two stars, Regulus and Sirius, were visible. The planets Mars and Venus could also be seen. Hazy clouds everywhere, except when dispelled by the sun's rays, prevented numerous stars being seen, which ought to have been visible in the gloom. Still, I must record my opinion, that the accounts I have read of the great darkness on the earth during the progress of a total eclipse, are greatly exaggerated, or at all events are not applicable to eclipses under low latitudes, when the great height of the sun throws such a mass of light to be reflected from the uneclipsed portion of the heaven.

In this case I carefully noticed all the facts I intended to report upon, and did not lose my presence of mind, when recording them in turn. The eclipse, occurring so early in the morning, prevented any appearance of those peculiarities amongst birds and beasts which have been so descanted upon, but had it occurred in the afternoon, I can quite believe in the truth of such facts as the birds roosting, and animals moving towards their folds.

As a spectacle, nothing can be imagined which is equal or similar to a total eclipse of the sun. The grandeur of the great shadow, is so immediately relieved by the brilliant glory of the surrounding halo—that all sense of awe is lost in admiration of a sight so astonishingly beautiful. The moment of returning light was especially wonderful in its effect and appearance, instantly illuminating the whole landscape with a brilliant, pale blue colour. In the 3rd and 4th

quadrants, the length of rays from the corona were far larger than from the 2nd and 3rd; the greatest flaming projections rose in those quadrants, so it appears evident that the great mass of light is in the sun's atmosphere, and it is difficult to conceive that it can be caused by anything except simple combustion, such as we witness in our own fires. (The known motion of the sun through space indicates that it thus obtains its constant supply of oxygen, and its great rate of progression, rotation and revolution round its orbit of momenta may be accepted as a sufficient exciting cause of ignition and light in itself.) The brightness of the corona appears to be due to the dispersion of the sun's rays in our atmosphere. It is to be hoped that the experiments by the properly supplied expedition at Guntoor will determine this point to the satisfaction of those who are qualified to weigh the facts.

In my sketch (Plate 5) I think that I have made the great flames far smaller than they appeared in comparison with the moon. The great flame in the fourth quadrant, when viewed through the telescope, looked at least a third of the moon's diameter. The lights in the 3rd quadrant were not visible after totality; they were golden coloured and were detached from the moon's surface. The outline of the moon was broken round all the edges of its surface.

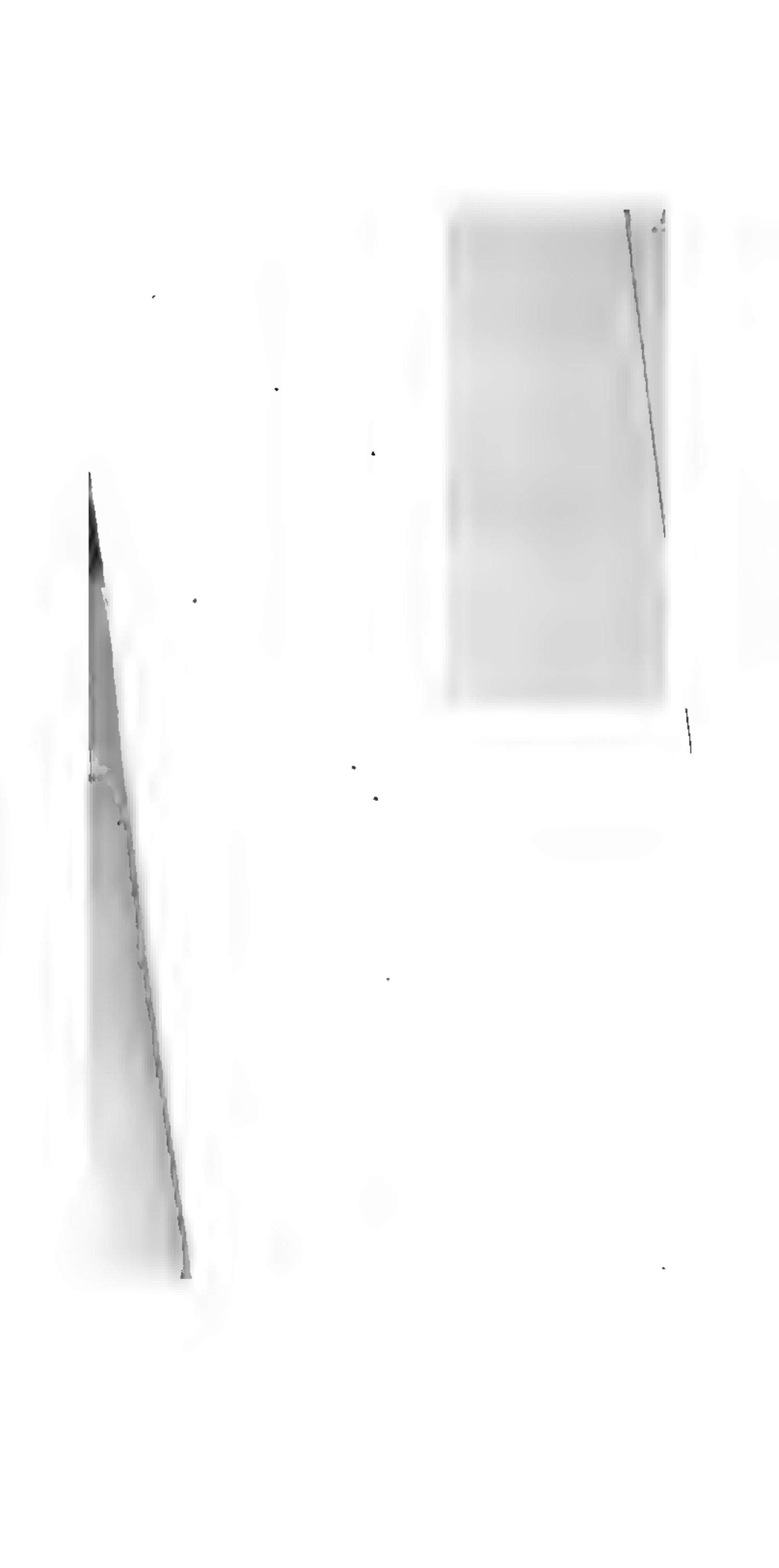
August 18th, 1868, on board my boat in the Kistna Canal.

Dr. Partridge then exhibited the drawings of the eclipse, as seen from on board the French steamer "La Bourdonnais." The drawings had been made by the Doctor and the Pilot of the steamer.

A conversation took place in which several members joined. Dr. Partridge drew attention to the admirable observation and description of the eclipse observed in 1860, in Spain by W. De La Rue, and published in the Philosophical Transactions of the Royal Society for 1862, and referred to several points in which the present observations confirmed these earlier ones.

* * * * *

The President said they had also received from some other members of the Society a few observations noted at various places not within the limits of totality of the Eclipse. Mr. F. Fedden sent a sketch shewing the several phases of the obscuration as seen at Bhooj in Cutch. Mr. A.B. Wynne also sent an excellent series of diagrams shewing the successive





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appearances at the same place. With regard to the frequently noted effects of an eclipse on animals, Mr. C. Oldham, who saw the eclipse at Madras, writes "the crows roosted; my fowls went on as usual picking up their food, and apparently undisturbed, but as the light returned again, my neighbour's fowls commenced crowing furiously.—Dogs were totally unaffected." It was remarkable that every observer agreed in noting that the darkness resulting from the eclipse was not by any means so great as they had anticipated. This might be due to the hazy state of the atmosphere, diffusing the light very largely. The beautiful drawings which had been laid before the Society all agreed also in a very remarkable way in the position and character of the red protuberances; whether in those from Beejapoor on the west side of the Peninsula, those from Bezwarra on the east, or those from the Bay of Bengal still further to the East. The latter, the sketches taken from the deck of the steamer *La-Bourdonnais*, were peculiarly interesting and valuable as shewing the very marked elongation of the corona in a given direction, a fact also noticed by Mr. C. Oldham at Madras; and which had frequently been observed before. The Society he was confident would join with him in thanking Major Macdonald and Cap. Tanner for their communications, and also in expressing a hope that they would obtain a record of the more detailed observations with the spectroscope, and the polariscope. As yet they were only aware that these observations had been fortunately successful. It was a great disappointment and a source of deep regret that the admirably equipped party sent out by the Prussian Government had been so unfortunate.

The paper by J. Avdall, Esq., *On Armenian Grammars*, the receipt of which was announced at the last meeting, was laid before the Society. It contains a valuable list of all grammars of that language, with short critical notes.

The President then called upon Bábú Rájendralála Mitra, to read his *Notes on Inscriptions from Mathurá*.

(Abstract.)

Sometime ago in digging into a mound, while clearing a site for a new kutcheri for the collectorate of Mathura, the workmen came to what turned out on further excavation to be the remains of a large Buddhist monastery. The building was of the red sandstone now so common in Delhi and Agra, and contained a number of statues more or less muti-

lated, of the same material. The figures were all Buddhist, and they decided the character of the building in which they were found. Among the sculptures were the bases of several large pillars bearing inscriptions in corrupt Sanskrit and the Gupta character. Some of the statues had similar inscriptions. The bulk of the stones, sculptures, and statues found were broken into ballast for the repair of roads, but a few were rescued for the Society's Museum. Among these are several which bear inscriptions, and the paper supplies transcripts and translations of these. Three of the inscriptions bear dates, and according to one of them, the monastery was founded by the Scythian king Oerki, Sanskrit Huvishka, B. C. 50—30, whose dominion in India seems to have extended so far down as Mathura. Another dated inscription gives fragment of the name of a king which has been conjectured to be Vāsudeva.

The President then called on Mr. Blochmann, to read his *Notes on certain Persian Poets styled Sultán*.

Notes on the Poems of Prince A'zam uddín, a grandson of Típú Sultán, and on three other Persian Poets, known under the name of Sultán, by Mr. H. BLOCHMANN.

Among the presentations announced this evening the *Diwán-i-Sultán* deserves a short notice. The book contains a collection of ghazals, or love poems, by Prince Muhammad A'zamuddín, a grandson of Típú Sultán. The name of the father of the poet is Prince Muhammad Shukrullah, whose brother, Prince Ghulám Muhammad, is the only surviving son of Típú. Prince A'zamuddín, as I am informed by the donor, was born in 1809 at Sháhnagar, near Calcutta. Like his brother, Sháhzádah Bashíruddín, who lives at present at Chinsurah, he was a man of extensive learning. He died in September, last year.

According to the custom of all Persian poets,—a custom which has become an established rule since the times of Sa'dí,—Prince A'zamuddín wrote under an assumed name. He chose the name of *Sultán*. The collection is stated in the preface to have been made by Mír Ghulám 'Alí of Calcutta, who says that the poems of the Prince amount to fifty thousand lines, and upwards. Of these the book before the Meeting contains a selection of about six thousand lines. Before the book was sent to press, the Prince had been asked to revise some of the

ghazals; but he declined on the ground that he had wasted sufficient time in the composition. Strict Muhammadans look upon making poems as a worldly, and therefore useless, occupation; they make, however, an exception in favour of religious poetry. Thus Badáoní, the historian of Akbar's time, one of the greatest zealots the Islam has produced, complains in his work* that, in his youth, he occupied himself with making poems, an occupation fit, as he says, for the ages of heathenism, and at variance with the spiritual nature of man.

It must, however, be borne in mind that Orientals are apt to explain love poetry, or poems sung in praise of wine, in a *mystical* sense, in which case they consider such poetry lawful; and although there are examples on record of poets who freely indulged in love and wine, as *Fughání of Shíráz*, who provided himself with a leg of beef, and remained concealed in a tavern during the Ramazán, the instances are far more numerous of those who lived abstemiously, and never perhaps touched a drop of wine. For a European mind it may look like an anomaly that a Muhammadan poet should choose to speak of forbidden things as wine, often in the most sensual manner, in order to describe the mysterious aspirations of the heart to God; but the biographies of many poets, and the evidence of their works, as in the case of Nízámí, prove the anomaly to be a fact. Hence the names of great poets, as Nízámí, Sa'dí, and Háfiz, appear now-a-days surrounded by a halo of sanctity, and their tombs are frequently resorted to by pilgrims.

The example of the classical poets compels a modern poet to speak of love and wine; in fact, besides these two subjects, he has little freedom. He is even tied in the choice of his metres. The *Gul i Kushtí*, a poem by Mír Naját, the *Zalíkhá* by a poet like Firdausí, are continually found fault with, because they are not written in the metres which are now believed to be appropriate. For an Indian especially, whose language is not Persian, it is a difficult thing to write Persian verses. This can only be accomplished after years of study; for the metrical art will require as much application as the study of the language itself.

The language of Prince A'zamuddín's poems is, on the whole, flowing. It shews occasional traces of archaisms, which prove the learning of the poet and his Indian origin; and although his thoughts do not

* Vol. III. p. 239, ed. Bibl. Ind.

rise to the sparkling conceptions of Náçir 'Alí of Láhór, I'jáz of Ágrah, and Bedil, the great poets of the time of Aurangzeb, nor to those of Mirzá Nausha of Delhi, the Persian poet of our age, they are pretty, and abound in elegant allusions.

I add a few particulars on three other Persian poets, who have written under the poetical name of *Sultán*.

The name of the first is Sultán Muhammad, son of Shibábuddín, a nobleman of the Persian town of Qum, which lies half-way between Teherán and Içfahán. According to the *Atashkadah*, Sultán Muhammad became the chief of the town; but it is not mentioned when he lived. To judge from the few verses quoted in the *Atashkadah*, he belongs to the *Mutaakhkharín*, or modern poets, i. e., the poets of the last three centuries. The following *Rubá'i* is by him.

*An dil kih ba 'aish sarfardázi mîkard,
Bar hajr nazar bah turktázi mîkard,
Dí dar khum i án du zulf i purtáb u khumash
Dídam kih nishastah búd u bázi mîkard.*

A heart which once engaged in life's giddy whirls,
And looked with scorn profound on lover's pain,
Gets soon entangled in a fair maiden's curls,
And plays, a helpless captive, with his chain.

Another poet, who adopted the poetical name of *Sultán*, is the renowned 'Alí Qulí, better known in Indian history as *Khán Zamán*, a title bestowed upon him by the Emperor Akbar. Khán Zamán was the son of Haidar Sultán, an Uzbak noble, who had attached himself, in Persia, to Humáyún, Akbar's father. When the exile of that monarch ended with his conquest of Qandahár, Khán Zamán was raised by Humáyún to the dignity of an *amírulumará*, or principal grandee. He distinguished himself in the wars which led to Humáyún's restoration in India. The greatest service which he rendered to Akbar, a few months after Humáyún's death, was the victory which he gained, at the head of Akbar's advance guard, over the much larger army of Hémú in the battle of Panípat, on the 13th November, 1556. I mention this, because two passages in Elphinstone's History of India (*Second edition*, pp. 462 and 496) read as if the battle of Panípat had been won by *Bairám Khán* on the *fifth* of November,

1556. But the text of Badáoní, printed by our Society, fixes the *thirteenth* as the day of the battle,* and also shews that Bairám, together with Akbar, was at some distance from Panípat, and could only send reinforcements. For this victory, which enabled Akbar to enter into Dihlí and Ágrah, 'Alí Qulí received the title of *Khán Zamán* (an abbreviation for *Khán i Zamán*), or the *Khán of the age*. After this we find Khán Zamán driving the Afghans from the provinces east of Ágrah, and conquering Lak'hnaú. In courage and martial genius he is placed by Badáoní above Bairám ; but his unruly and overbearing temper, which ultimately led him into open rebellion, seems to have been the cause why Bairám was in greater favour with Humáyún, and was chosen as Regent for the young Akbar. Badáoní in his praise of Khán Zamán, goes so far as to say that he, and his brother Bahádúr Sháh, gained unparalleled victories in the Eastern tracts of Hindustan, and that both would have been fit to be kings, if their rebellion had not issued unsuccessfully. The booty which he collected in these wars, was too tempting for Khán Zamán ; he withheld the share of the Emperor, and mutinied. Though Akbar, in 1565, condoned the offence, Khán Zamán remained dissatisfied, and again rebelled two years later, when Akbar had to move personally against him. A fight ensued ; Khán Zamán's horse was killed, and he himself thrown to the ground. An elephant driver saw him, and attacked him. The elephant crushed Khán Zamán to pieces, " so that his bones," says Badáoní, " became like pounded antimony, and his body like a bag full of chess figures." His head was recognized by his Hindu manager Rái Arzání, who put the Khán's head over his own, and cried loud. Khán Zamán's brother was also killed. The fight took place near Jaunpúr, on Monday, the 9th of June, 1567.

Khán Zamán was a patron of men of learning, and of poets, many of whom lived with him. Among the latter was the great poet *Ghazáli of Mashhad*. I do not know whether Khán Zamán's poems exist in a collected form. Badáoní and Bakhtáwar Khán have preserved a few of his passionate verses. In his poems he praises a youth of the name of *Sháham Bég*, whose story, as related by

* It would appear that Elphinstone read *duwum*, the *second*, instead of *duhum*, the *tenth*, of the month of Muharram, A. H. 964. Bakhtáwar Khán, in his *Mir-át-ul 'Álam*, agrees with Badáoní.

Badáoní, is an example of the licentiousness among the nobles, which caused Akbar so much annoyance.

The last poet known to me, that adopted the poetical name of *Sultán*, is Sultán Muhammad Siplakí. He lived at the time of Humáyún and Akbar, and was called *Siplakí*, as he came from *Siplak*,* a place near Qandahár. To his annoyance people changed the name of *Siplakí* into *Sipkalí*, the Hind. word for a lizard. He composed a poem in praise of Khán Zamán, who gave him a present of a thousand rupees, requesting him at the same time to discontinue the poetical name of *Sultán*, as it was the same as his own. Siplakí naturally refused, and told the Khán that he had got that name from his father, and was known as a poet in India under the name of Sultán. Khán Zamán got enraged at the refusal, and, as if the life of a man was nothing, called for an elephant, and gave the order to trample the poet to death. Mauláná 'Aláuddín i Lárí, the teacher of Khán Zamán, who was present, interposed, and asked his pupil to pardon *Siplakí*, if he could make on the spot a poem of the same metre† and rhyme as a certain poem of the poet Jámí; but to kill him, if he were unable to do so. This was done; the poem satisfied Khán Zamán, who hasty as he was, doubled his former present, and said much in praise of the poet. Siplakí thought it, however, best to withdraw from the neighbourhood of the unprincipled chief, and went ultimately to the Dek'han, where he took part in the siege of Bijánagar. Badáoní blames him for having given a refusal to a nobleman like Khán Zamán. He gives a few of Siplakí's verses. I do not know whether there exists a collection of his poems.

Maulvi Abdullatif Khan Bahadur said that Prince A'zamuddín whose Díwán was before the Meeting, was one of the best Persian writers of the present age. He excelled both in prose and poetic compositions. His brother, Sháhzádah Bashíruddín was likewise known in Calcutta for his elegant writings; and he (the Maulvi) trusted that the Sháhzádah would yield to the repeated request of his numerous friends, and lay his writings before the public in a more permanent form.

* There may be a slight error in this name, as the MSS. used for the text of Badáoní give different spellings.

† Two poems of the same metre and rhyme are said to be of the same *zamín*, or ground, and the later of the two is the *javáb* of the older poem.

The President then asked the meeting, as the evening was far advanced, to defer to the next meeting Dr. Oldham's paper on the action of the Ganges in the Benares province.

The receipt of the following communications was announced :—

1. From Babu Rajendra Lala Mitra, *Notes on the inscriptions from Mathura.*

2. From H. Blochmann, Esq., *Notes on the Poems of Prince A'zamuddín, grandson of Tipu Sultán, and on three other Persian Poets styled Sultán.*

3. From W. Oldham, Esq., LL. D., *Memoranda on the action of the Ganges in the Benares Province.*

The following additions have been made to the Library since the last meeting.

Presentations.

**** Names of Donors in Capitals.*

The Journal of the Royal Asiatic Society of Great Britian and Ireland, Vol. III, Part II, N. Series.—THE SOCIETY.

The Proceedings of the Zoological Society of London, Part III, 1867.—THE SOCIETY.

List of Vertebrated animals in the Zoological Society's Garden.—THE SAME.

Report of the Council and Auditors of the Zoological Society of London.—THE SAME.

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Purchase.

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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR OCTOBER, 1868.

The monthly Meeting of the Society was held on Wednesday the 7th instant, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the Chair.

The minutes of the last meeting were read and confirmed.

The receipt of the following presentations was announced :—

1. From Dr. F. Mason, A copy of a *Burmese Handbook of Medicine*, by the donor.

2. From Dr. J. B. Davies, A copy of *Grecian Anthropology*, by the donor.

3. From the Curator Government Books, North-West Provinces, A copy of *Report on past famines in the North-West Provinces*, by C. E. R. Girdlestone, Esq.

4. From Dr. H. A. Jaeschke, A copy of *Ueber die Phonetik der Tibetanischen Sprache*, by the donor.

5. From J. Avdall, Esq., A copy of the second edition of *Les Auteurs Hindoustanis et Leurs ouvrages*, by M. Garcin de Tassy.

6. From Major F. Tennant, R. E., A photograph of the Moon on glass.

7. From the Government of India, *Ethnological Report on the Races of Rajputana*, with photographs.

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected ordinary members—

W. Eddowes Esq., M. D.

S. M. Shircore, Esq., M. D.

The following are candidates for ballot at the November meeting—
 Lieut. H. H. Cole, R. E., proposed by Dr. J. Fayrer, seconded by Mr. C. E. Bayley.

Captain W. R. M. Holroyd, Director of Public Instruction, proposed by Lieut.-Col. R. A. Maclagan, seconded by Mr. A. Kempson.

C. Pearson, Esq., Inspector of Schools, Panjab, proposed by Col. Maclagan, seconded by Mr. A. Kempson.

J. C. Geddes Esq., C. S., Magistrate and Collector of Cuddalore, proposed by the President, seconded by Dr. F. Stoliczka.

The following gentlemen have intimated their desire to resign from the Society—

G. A. D. Anley, Esq.

A. W. Croft, Esq.

The Council report that they have elected C. H. Taylor, M. A., a member of the Philological Committee.

The Council also report that they have sanctioned the purchase of the *Poems of Chand* in the Bibliotheca Indica.

Mr. Oldham, on behalf of Major Tennant, R. E., presented to the Society a photograph of the moon taken on the 11th August, five days before the solar eclipse of the 18th. It is a positive photograph taken through a glass, and shews very clearly some of those curious crater-like depressions which are so numerous on the moon's surface.

Mr. Oldham also, regretting the absence of Major Tennant, stated that he had received from that officer, the gratifying information that the party of observers at Aden had succeeded in getting rough drawings of the Protuberances, &c. Their spectroscopic observations failed from clouds, as also their polariscope. They got spectroscopic results on the Corona, and measures of the protuberances. The observers at Aden were Professor Weiss, and Ensign Riha. One of the Prussian party on the west side of India got some photographs. Major Tennant also sent a drawing by Professor Kern Lux, who was at Bijapoor, with Captains Tanner and Haig.

The President then called on the Secretary to read Dr. W. H. Dallman's paper, which had been deferred at the last meeting.

Memorandum on the Action of the Ganges in the Benares Province,—
by WILTON OLDHAM, Esq., LL. D., Ghazeepore.

In the Benares Province, the banks of the river are of a two fold character :

1st. Permanent.

2nd. Non-permanent.

The permanent river banks are raised above the height of the highest floods, and contain a firm substratum of kunkur, or else a considerable proportion of kunkur mixed with clay. The permanent river banks run in ridges nearly parallel to each other, but varying in distance apart. In some places, *e. g.*, at Beerpoor in the Ghazeepoor district, the permanent banks are only about a mile or two miles apart; at other places, as for example opposite Chunar, or opposite the Zumaneeah Railway station, the permanent river banks are eight or ten miles apart.

The river in very few places washes two permanent banks; more commonly there is a permanent bank on one side and a non-permanent bank on the other side, with the permanent bank at some distance further inland; or else the river washes two non-permanent banks, and the permanent banks are not reached by the water except in an unusually high flood.

The destructive fluvial action of the Ganges is of a two-fold character :

1st. Slow.

2nd. Rapid.

The slow destructive action of the river is its action on the permanent banks, and the rapid action on the non-permanent banks.

The destructive action of the river is invariably on the concave bank of the river. Where the river runs straight, neither bank gains or loses; a convex bank always has a tendency to gain by accretion, and a concave bank invariably loses by diluvion. This is easily accounted for; the current sets dead against a concave bank, and causes the washing away and hollowing out of the portion of the bank near the river, and consequently the fall and destruction of the bank. The civil station of Mirzapoor is built on the permanent bank of the river on the concave curve. There is a constant destruc-

tive action going on ; but owing to the permanent character of the bank, the destruction is very slow, a few feet in a few years. The villages of Manipoor and other adjacent villages in the Kurunda pergunnah of the Ghazeepoor district are situated similarly in the concave curve in the river, but there the bank is *non-permanent*. The destructive action of the river is, therefore, of the most rapid character. Since 1840, a tract of country containing about 350 acres of rich land has been destroyed, and the river course has at the point of maximum deflection changed two miles, i. e., the present river edge is two miles from where it was in 1840. These facts are proved by comparing the pergunnah map prepared in or about 1840 by the officers of the Revenue Survey with the village boundaries and the river bank as they now exist.

The destructive action of the river in such places is not mere in the rainy season, but continues throughout the year. Large masses of the bank daily fall into the river, and in the cold season, large masses of earth may be seen lying near the water edge having on them wheat in ear and flax in flower, which a few days before formed part of a flourishing and beautiful field. The river's bank in the Kurunda pergunnah is entirely of a non-permanent character, and the pergunnah contains no backbone of kunkur or any other resisting material. The rapid changes which are now going on, are likely to continue until the river changes its course, and runs in a straight course from Chochukpoor to Ghazeepoor along the permanent northern banks of the river, which are beyond the boundaries of the pergunnah ; the pergunnah will then lie at the south instead of the north of the Ganges.

The permanent river banks may be considered the limits of the area, liable to alluvial increment and *diluvion*, as the destructive influence of the river on the permanent bank is too slow to be of any fiscal importance.

The immediate effects of a change in the river's course are generally injurious, as the land destroyed is land which, having been formed some time, is well raised and productive, while the new land formed on the opposite bank is at a low level, generally sandy, and of first of no value.

That portion of the river's bed which lies low, has, in the rainy season, a deep channel of the river flowing over it. A deep channel, as a rule, has a rapid current, and consequently the only deposit which can be formed is of sand, as mud would be swept away by the stream. After, by deposits of sands for a few years, the bed has been raised, it is in the rains only covered by a shallow, and therefore a slow stream, and under such circumstances, the deposit of earthy particles is possible, and a muddy deposit is formed rapidly. I have myself seen in a small bay of back water of the river, out of the current, a deposit of about five feet thick of fine sand and earth formed in a few days.

It may be remarked that the river's bank on the concave side of a curve is always precipitous, as the destructive scooping action of the current destroys a slope, and hollows and undermines the bank. On the other hand, the bank on the convex side of the curve is always gently sloping, formed recently by gradual accretions of sand, at the part near the river, and of earth on the upper portions, where in the rains the current runs with little force.

The bank on the concave side may be permanent or non-permanent, but the river's bank on the convex side is *always* non-permanent, because formed by recent deposits and containing no kunkur. Though non-permanent in its character, the convex bank is safe and lasting from its situation, and from its immunity from the action of the current. The Benares Railway Station is built on a portion of the bank, non-permanent in character, but safe from its convexity; while the cities of Benares and Mirzapoor are built on portions of the concave bank, permanent in character, but exposed to the destructive influence of a current.

A large mass of kunkur deposit has a remarkable power of resisting the destructive influence of current. The kunkur bank at Adilpoora within the Sooltanpoor Cantonment, nearly opposite to Chunar, has for years stood unharmed by a most violent current.

The investigation of the law of changes in the river's bank, is of some practical importance in connection with the navigation of the river, as it is always desirable to have some foreknowledge of changes

likely to occur in the navigable channels. Trees falling into the river with portions of the bank form *snags*, dangerous obstacles to navigation. It may safely be asserted that every year all trees on the concave bank of the river should be cleared to within a distance of 500 feet, where the bank contains no kunkur, and is non-permanent; and to within a distance of 10 feet, where the bank contains kunkur and is permanent. On the other hand, it is a useless destruction of property to cut down trees on the convex bank, or on either bank in a straight course of the river. In those parts of the Ganges where the permanent banks are far apart, the river runs in reaches from the northern to the southern permanent bank, then curving round again to the northern permanent bank, and so on. In those parts where the permanent banks are near each other, the course of the river is tolerably straight, and changes little from year to year.

Ghazee-pore, August 24th, 1868.

The President invited discussion on the paper just now read. Mr. Medlicott said—

“Being called upon to speak, I can only say that the paper we have just heard read contains nothing whatever that is new, or that gives greater precision to previous knowledge. Without having ever seen a river, one can tell that the current must set to the concave bank, or that a bank of recent silt will wear incomparably faster than one of consolidated clay. The constant depredations and changes of the great rivers are familiar to every resident of the plains of India. As to the conditions of the river in that region, it has been repeatedly described how the large rivers “up country” run in Khádars—wide valleys limited by the high permanent land of the adjoining Duabs. The locality noticed in this paper is near the lower limit of the region where such conditions obtain—where the river from being erosive becomes formative. Mr. Ferguson, in his invaluable paper on “The Recent Changes in the Delta of the Ganges,” has pointed out that below Buxar, the mean fall of the river becomes about six inches in the mile, which is the approximate limit assigned by Mr. Ferguson for a depositing river, and that above Buxar, the fall becomes thirteen inches in the mile.

A conversation took place in which several gentlemen joined.

The President said, in concluding the remarks on this paper, that he entirely agreed with Mr. Medlicott, that there was but little of novelty in the paper which had been read. It was a purely local, and simple description of facts; not pretending to great scientific accuracy. For example, it was scarcely correct to speak of the eroding action of the river as of two kinds, slow and rapid, inasmuch as the action was in all cases of the same kind, and the slowness or rapidity with which the results were produced, depended on the nature of the material acted upon. Again Mr. Wilton Oldham had, in speaking of the 'permanent' banks of the river, used the term evidently in rather a general, or relative sense. No bank of an eroding river could truly be called permanent; still the word was applicable, when the rate of erosion was so slow, that changes were only traceable after long intervals. But Mr. Oldham had also, in this paper, used the term in a sense somewhat different from that in which it is commonly used. Every river flowing in any alluvial plain, which may be taken as comparatively homogeneous, has for itself at different times, and subject to differences in the slope of its bed, a plain or surface, within the limits of which it tracks its course back and forward, depositing here, and cutting away there, and thus often passing and repassing over the same ground. And so far as general observations are concerned, these limits of oscillation are so slowly changeable, that the banks, limiting the plain of the river, which for the most part become tolerably well marked, may be, and generally are, called the 'permanent' banks, those banks within which (abstracting considerations of external forces) the fall of the river's bed and the amount of water combine to restrain the oscillations of the river. If taken in this sense, the permanent banks of a river flowing in an alluvial plain, may be generally considered to be composed of similar materials to the country around, and would be, if the river were directed against them, as liable to erosion as any other part of the country.

But the case stated by Mr. W. Oldham is quite different; here the permanent banks, he speaks of, are composed of material quite of a different kind and of a greater resisting power. He describes these deposits as characterized by kunkur, and being of a hard stiff clay. And

in this, without knowing it, the writer has referred to one of the most interesting facts in the geology of the Gangetic plains. Above Benares we might say, certainly above the junction of the Jumna and Ganges at Allahabad, the prevailing character of the materials forming the wide plains in which these rivers flow, is a hard stiff clay abounding in kunkur, which in places forms great beds or sheets. This is associated occasionally, chiefly in the upper portions of the river valley, with pebbly beds often concreted by lime forms the prevailing character of the beds. Below Benares, however, the greater portion of the plain of the Ganges from the foot of the hills on the north, to the mouth on the south, is composed of much more recent deposits, the result of the action of the river itself, chiefly composed of soft incoherent beds of fine sand and silt. Here and there, through these, we find standing portions of the kunkury clays, &c., to which we have referred, under circumstances which shew that they are remnants of a once widespread and general deposit, now existing as islands in the stream of the more recent Gangetic alluvium. For these other deposits, we have generally used the term first used by the lamented Dr. Falconer, and called them the 'Older Alluvium.' It is, however, a term liable to mislead, inasmuch as the age of these deposits is very widely removed from that of the true alluvium. These kunkuriferous beds in the Jumna, yielded many valuable fossils years since, which Dr. Falconer himself identified with those found in similar deposits in the valley of the Nerbudda, and looking to the proximity geographically, and to the great similarity lithologically, of the two deposits coupled with the similarity of the fossils contained, there seems little question that the so-called Older Alluvium of the Jumna and Ganges is of the same general age as the so-called 'Pleiocene' deposits of the Nerbudda and Godavery. Below Allahabad but few fossils have been found in these deposits. I have a joint of a thigh bone (probably bovine) which was obtained in sinking a well near Patna, and a few other fragments have from time to time been found. But even in the Nerbudda, where fossils are much more numerous, they are local in their distribution.

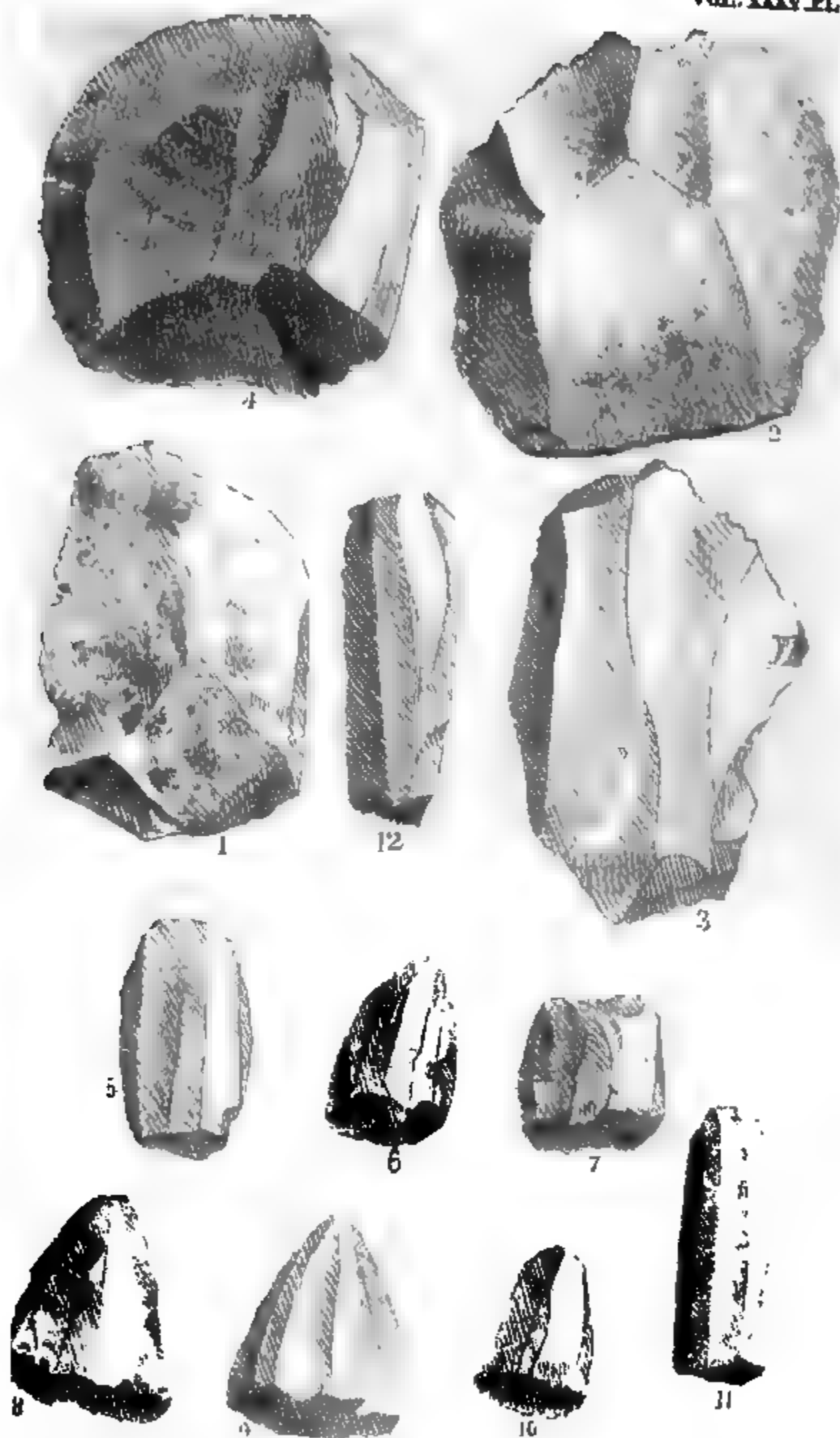
These islands or isolated areas of the older deposits occur as noticed by Mr. Oldham, near Ghazeepore, south of the Ganges; the



ACATE CORES FROM JUBBULPOOR

Drawn & lith'd by Kate MacFar Student Craft School of Art California
 T. Black & Co. Col.

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AGATE CORES AND FLAKES FROM JUBBULPOOR
AND CHINDWARA.

Drawn & lith'd by H. H. P. Standard Govt School of Art. Cal.
1 Black & C^d Col.



AGATE FLAKES FROM JUBBULPOOR

*Drawn & Lith'd by K. S. S. 1st Student Govt School of Art Calcutta
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stretch along from Buxar to near the Sone, forming the higher ground north of Beeheea; they occur again under the narrow ridge on which the cantonment of Dinapore is placed; under the city of Patna; again under Bhagulpore; still further east near Colgong; forming the high ground extending northwards from Rampore Beauleah towards Darjeeling, again they constitute the often-talked of Madhopur jungle, north of Dacca; have been traced by Mr. Medlicott on the flanks of the Garo hills, and by Captain Godwin-Austen at the foot of the Bhootan hills. Thus the permanence of the banks noticed by Mr. W. Oldham in this brief paper is due to the fact, that there the river has cut its channel through one of these isolated areas of the older beds, which, as compared with the recent alluvium, have just as much greater a power of resistance as an ordinary sandstone would have as compared with loose sand.

The determination of this character of the river's bank, is of importance, as the writer has shewn, both as affects the navigation of the river, and the agriculture of the district. And while he has not added materially to the knowledge of the action of the river, it is always desirable to have on record such local observations, detailed with care, which only those locally resident can attempt.

The President then asked the Philological Secretary to read an extract from a letter received from Prof. A. Kuhn, Berlin.

Bábu Rájendralála Mitra said, he thought, the extract would not be unwelcome to many members of the Society in this country. It referred to a subject of considerable interest, which, in ancient times, inspired the imagination of man with some of the richest ideas of poetry, and in later days afforded the means of unravelling many a classic myth—the gorgeous sunrise of the East. To it Homer, it was said, owed his plot of the Trojan war, and the Rámáyana, it was presumed by some, had nothing more substantial for its substratum. To the poets of the Vedic age it was a most fruitful theme, and the Vedas were interspersed with a number of myths founded on it. One of them is indelicate and highly offensive; but with the Rishis of the primitive age, untrammelled by the amenities of modern civilization, it was a great favorite. It was no other than the rape of Ushá by her father Brahmá,—the dawn likened to a charming nymph chased by her progenitor, the sun. In one version of this myth, given in the third chapter of the Aitareya

Bráhmaṇa (section 33), Dawn is represented to have, in fear of her father, assumed the form of a red deer, whereupon Prajāpati assumed the form of a fierce animal, named *ṛishya*, and chased her. The gods, disgusted at the sight of the incestuous attempt, but unable individually to check the ravisher, put forth the aggregate of their most fearful qualities in the form of a god named Bhutavan or Rudra, who pierced, with an arrow, the lustful brute, which immediately transformed itself into the constellation Orion. A counterpart to this myth has been found in a German tradition by Professor Kuhn, and the letter contains an abstract of a paper on the subject recently published by him. Professor Kuhn writes—

‘Both in our ancient and modern popular traditions, there is universally spoken of the Wild Hunter, who sometimes appears under the name of Wodan or Goden, and was, in heathenish times, the supreme god of the ancient German nations. This god coincides, both in character and shape, with the ancient Rudra of the Vedas, vide p. 99. Now there is a class of traditions, in which this ancient god is said to hunt a stag and shoot at it, just as Rudra in the Bráhmaṇas is represented as shooting at the *ṛiṣya* and *rohit*. The stag, in German mythology, is the animal of the god Freyr, who, like Prajāpati, is a god of the sun, of fertility, &c., so that the shot at that stag is to be compared with Rudra’s shooting at the *ṛiṣya* = Prajāpati. I have further endeavoured to show that some indications exist in the mediæval penitentials of Germany and England, which give us to understand that at the close of the old year, and at the beginning of the new one (we call that time “die Zwölften” or *the twelve days*, the *dvādaçāha* of the Indians), there were mummeries performed by the country people, in which two persons seem to have been the principal performers, the one of whom was disguised as a stag, while the other was disguised as a hind. Both represented a scene, which must have greatly interested and amused the people, but very much offended the clergy by its sordid and hideous character; and from all the indications which are given in the texts, communicated by me, pp. 108-180, we may safely suppose that the chief contents of this representation was the connexion of a stag and a hind (or of an old woman), which was accompanied by the singing of unchaste songs. From English customs at the New Year’s Day, we may also infer that

the hunter's shooting at this pair was even a few centuries ago, nay is even now, not quite forgotten. Now as the time of the 'twelve days' was with our ancestors the holiest of the whole year, and the gods were believed to descend at that time from heaven, and to visit the abodes of men, we may firmly believe that this representation also was a scene of the life of the gods. I hope to have thus proved that the brahmanical and German traditions are almost fully equal, and I have finally attempted to lay open the idea, from which the ancient myth proceeded. According to my explanations, our common Indo-European ancestors believed that the sun and daylight (which was so to say personified under the image of various animals, as a cow, or bull, a horse, a boar, a stag) was every day killed in the evening, and yet re-appeared almost unhurt the next morning. Yet a decay of his power was clearly visible in the time from midsummer to midwinter, in which latter time, in the more northern regions, he almost wholly disappears, and, as in Northern Germany during the time of the twelve days, is seldom to be seen, the heaven being then usually covered all over with clouds. I have, therefore, supposed it was formerly believed that the sun was then completely destroyed by a god, who was both a god of night and winter as also of storm, Rudra = Wodan. The relics of the destroyed sun, they seem to have recognised in the brightest constellations of the winter months, December and January, that is, in the Orion and the surrounding stars. But when they saw that they had been deceived and the sun re-appeared, the myth gained the further development of the seed of Prajapati, from the remnants of which a new Aditya as well as all bright and shining gods were produced. I have further shewn that both Greek astronomy and German tradition prove to be in an intimate relation with the brahmanical tradition; for the former shows us, in almost the same place of the celestial sphere, a gigantic hunter (mṛigavyādha = Sirius; Orion, the hunter = mṛigashiras); whilst the latter has not yet forgotten that Saint Hubertus, the stag-killer, who is nothing but a representative of the god Wodan, had, like Rudra, the power of healing all diseases (the "bhishak-tama" of the Vedas), and particularly possessed cures for mad dogs, which not only were his favourite companions, but were also in near connexion with the hottest season of the year, when the declining of the sun begins, the so called *dog-days*."

With regard to the animal described in the Vedas as the *Rishya*, which word Dr. Haug translates by "a kind of deer," and Professor Wilson by "a white-footed antelope," the Bábu read the following extract from a letter of his to Whitley Stokes, Esq., in which he conjectures it to be the *Nilgáo*.

"There is nothing positive to prove what particular species of animal the *Rishya* is. A *Mṛiga* no doubt it is; but as that word is a generic term, including all the deer as well as the antelopes, it does not help me in the least. The Paṇḍitas, whom I have consulted, seem not to know much of the subject, and Sáyana, apparently, was not better off when he commented on the *Aitareya Bráhmaṇa*. He could only ascertain that the *Rishya* was a species of deer (*Mṛigavis'eshah*), and he had to prove it by a quotation from a lexicographer which says, "the *Gokarna* (supposed with some doubt to be the *Nilagáo* by Wilson), the spotted axis, the black antelope, the *Rishya*, the red deer, and the *chamarí* (Yak) are deer;" *gokarnah prishatainarshya rohitashchamarimṛigáh*). But great as he was as an expounder of the Vedas, and a profound Sanskrit scholar, Sáyana was no naturalist, and had, therefore, to stumble over every passage that referred to Vedic fauna. His acceptance of the Yak (*Poephagus grunniens*) as a deer is an instance in point. Another, and a very remarkable one, occurs in the third Book of the *Taittiríya Bráhmaṇa*, p. 637 of my edition, in which he describes the *gomṛiga* to be "either a wild ferocious horned cattle, or a hybrid between a deer and a cow." Judging from the name *go* and *mṛiga*, "cow" and "deer," and the mixed antelopine and bovine character of the *Nilgáo* (*Portax tragocamelus*, the Indian representative of the Elands and the Koodoos of Africa), I cannot but take that to be the animal intended. In the *Smṛitis* an animal is named the *Nilabrisha*, an exact synonym, of *Nilgáo*; (*Eshṭaryá vahavah putráh yadyapyeko gayám vrajet, yajeta vās'va-medhena nílām vá vṛishamut-srijet*;) but curiously enough it is described to be a "bull with a red body, white hoofs and horns, and a yellow muzzle and tail:" nothing blue, though it is named a "blue bull!" (*lohito yastu varnena mukhe puchchhe cha pándurah, setah khuravishánābhyám sa nīlo vṛisha uchhyate. Suddhitattva*, 211). To account for this inconsistency, I suppose, Raghunandana, the author of the *Suddhi*, and the *Vṛishotsarga Tattra* knew not the animal, and confounded his authorities. The *Nilgáo*

is not common in Bengal, and therefore not likely to be familiar to a Pandita.

"Of deer, most names, which were originally specific, have since become generic, and it is difficult now to identify them. In the *Káliká Purána*, quoted by Rájá Rádhákánta, nine different animals are described to be feral deer (*jángala*). Of these the first, *Harina*, is said to be "copper-coloured;" 2nd, the *Ena* "black;" 3rd, the *Kuranga* "light copper-coloured, and of the shape of, and as big as, the *harina*;" 4th, the *Rishya*, "an animal with a blue scrotum, generally known by the name of *Saroru*;" 5th, the *Prishata*, "white spotted, and somewhat smaller than the *Harina*." 6th, the *Nyanku*, "an animal with large antlers;" 7th, the *Sambara*, "identical with the great *Gavaya*" or wild-ox (*sambarogavayo mahán*, which may be made to mean the *sambara* is a large cow-like animal); 8th, the *Rájíva* "a deer with lines (or whirls of hair) all over its body;" and 9th, the *Mundí* or 'the hornless.'

"The first I take to be the *Cervus Wallichii* or the *Honglu* of Kashmir, an animal nearly allied to the *Cervus elaphus* or the Red Deer of Europe, the Edelhirsch of Germany. The second is the common antelope of Upper India (*Antilope bezoartica*) with a black body and white ventor and feet. Its colour leaves no doubt about its identity; for there is no other Indian deer or antelope that is black. It is the only animal that can correspond with Professor Wilson's "white-footed antelope." Its habitat, Upper India, was well known to Manu, who describes the characteristic of the land sacred to the Aryans as that where the black antelope grazes in a wild state. Its common name is *Krishnasára*. The third is our *Bará Singá* (*Rucervus Duvaucelii*) which is of a lighter colour than the first. The fifth is unmistakably the Axis of Bengal (*Axis maculatus*), commonly known by the name of *Harina*. The sixth I cannot make out, unless it be the *Ságnái* of Manipur (*Panolia Eldi*), an animal never seen in the plains now, but which may have had a wider habitat in former times. The seventh is the well known *Sámber* deer, often miscalled the Indian Elk (*Rusa Aristotelis*). It is common all over cis-Vindhyan India, and, for ought I know, may be equally so in the peninsula. It yields the leather known by the name of *Sábara*, which is highly esteemed as a very pure material for bedding, and

Hindus, during mourning for parents, generally have recourse to it. Its name I take to be a corruption of Sambara. It is, of course, quite a different thing from the Chamois skin which our syces take for the true *Sábara*. I should notice that the authority quoted above confounds the Sambar with the Gayal (*Gavæus frontalis*), but if the alternative meaning given by me be accepted, the difficulty can be got over. The eighth is evidently a striped antelope, perhaps the Gazelle, but I cannot make it out. The last is the Mouse deer which of all the Indian deer tribe is the only animal which has no horns. Its congeners of Java and elsewhere, such as the *Kanchil* and the *Chevrotain*, could not have been sufficiently known to come under the enumeration of a Puranic.

“Now for the *Rishya*, it must be evident from what has been said about the *Epa*, that it cannot be the white-footed antelope, and of antelopes we have only two others, the Ravine deer and the little *Quadricornis* that could be said to be common, and neither of these has a blue scrotum, which is said to be the peculiar characteristic of the *Rishya*. I am disposed to think, however, that Rájá Rádhákánta's reading of the *Káliká Purána* is not correct. I have been able to get hold of only one MS. of the work, and it does not give the slokas quoted, but judging from the fact of the first three animals, described in them, having the colour of their pilage noted, I think the fourth had likewise its general colour described, and not that of its scrotum. The word used is *nílándakah*, which I strongly suspect is a mislection of *Nilángakah* or the “blue-bodied;” and if this conjecture be correct, the *Rishya* would be the “blue-bodied” Nilgáo, a large, fierce and peculiarly uncommon animal, much better adapted to adorn a tale than a tame little antelope.

“The legend in the *Aitareya Bráhmaṇa* makes Ushá = Dawn assume the form of a red doe *rohit*, and Brahmá, to enjoy her society, should become a buck *rohit*;* but instead of that, he changes himself into a *Rishya*, and this circumstance suggests an argument in favour of my conjecture. The female of the Nilgáo is of a red-brown colour, without any shading of blue over it, which is the

* In the version of the myth given in the *Brihad Aranyaka Upanishad* Ushá to conceal herself, successively assumed the forms of a cow, a mare, a female ass, a she goat, a ewe, and other female animals down to a female ant, and Prajapati followed her successively in the shape of males of those animals.

characteristic of the male, and consequently appears to be of a different species from the latter. Hence it is that too different terms have been used to indicate the different sexes of the same species, instead of representing the female by a feminine affix to the name of the male term. This cannot be said of any other Indian deer that I have seen.

The whole of my argument, however, is founded upon an assumption, a supposed mislection, which I am not in a position to establish by reference to other MSS."

The Natural History Secretary then laid the following paper before the meeting;

Pandanophyllum and allied genera, especially those occurring in the Indian Archipelago ; by S. KURZ, Esq.

Mr. Policzka, in laying Mr. Kurz's paper before the Meeting, said that the plants which are referred to *Pandanophyllum* and the allied genera belong to a very interesting group of the large family of the Gramineæ. This family is usually divided into several sections, of one of which, the HYPOLYTRÆ, the present paper treats in particular.

Mr. Kurz gives a short review of the genera of this subdivision, including the following *Hypolytrum*, *Thoracostachyum*, *Lepironia*, *Pandanophyllum*, *Cephaloscirpus* and *Scirpodendron*. Of each of these genera, several species are described in the paper, and some of them new to the flora of the Indian Archipelago ; of others, details and remarks as to their history, etc., were recorded.

Mr. Policzka also drew the attention to an interesting species of a grass which Mr. Peterson brought to the meeting. The specimen was collected in Darjeeling, and was remarkable for its great thickness in proportion to the length of its body. It resembles a *Typhlops*, but is usually much thinner, than species of this genus usually are.

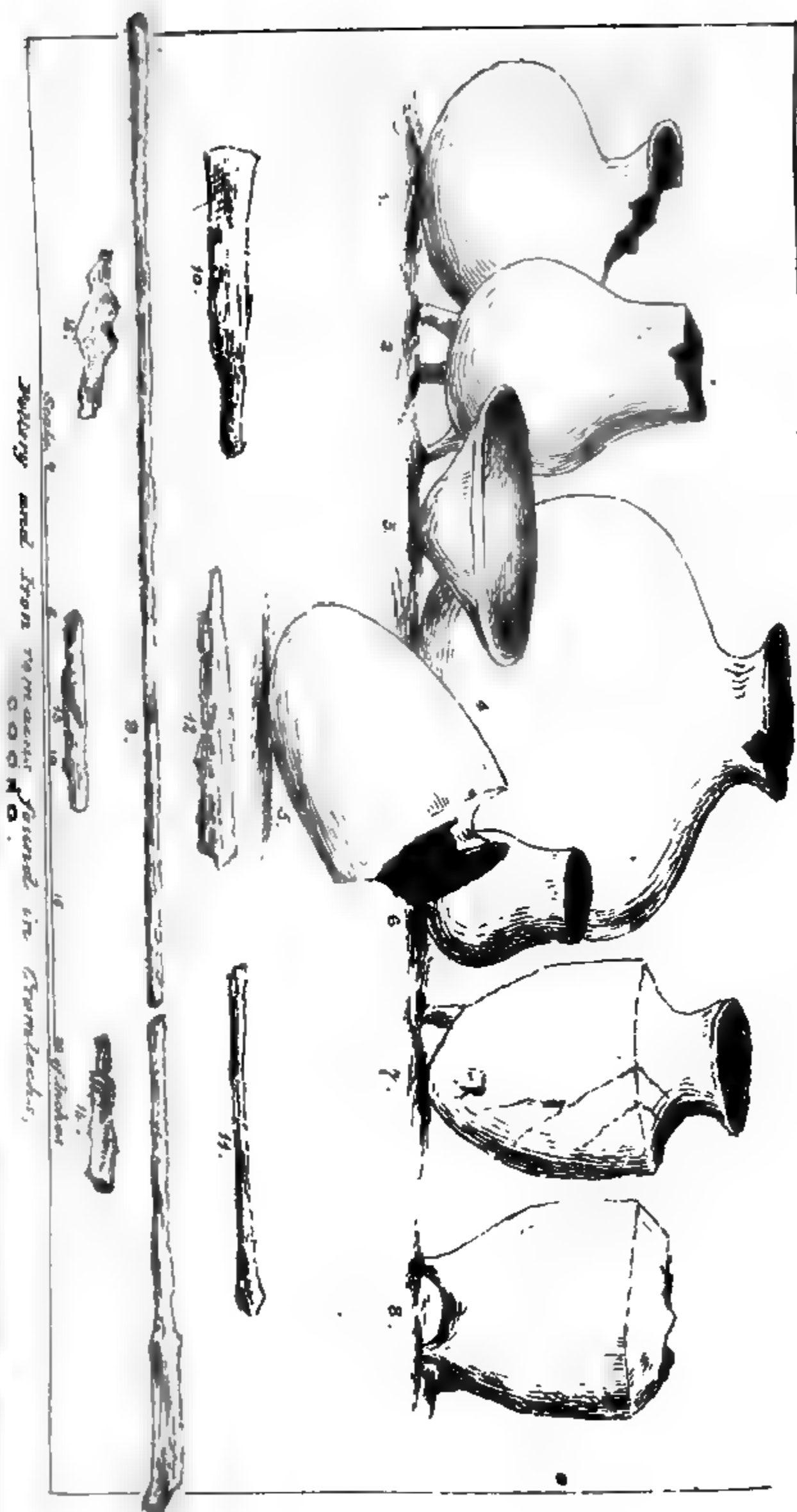
Mr. Policzka also stated that he has just received a long letter from the present working Curator of the collections of the Asiatic Society, Mr. Blyth, and he was sure the members would be glad to hear

Outtack, on Meteorological observations taken by him during the last eclipse, and remarked that the chief interest attaching to these was the thermometric observations. At the commencement of the eclipse 9h. 6m., the thermometer stood at $87^{\circ} 5'$; at 9h. 42m. it had fallen to 85.5 ; at 10h. 6m., to 84.0 , after which it rose again, showing 88.0 at 11h. 29m., when the eclipse was quite over. A blackened-bulb thermometer in *vacuo* was exposed to the sun's rays, one foot from the ground; at 8h. 30m. it indicated $126^{\circ} 00$: it was then reset and exposed to sun's rays for half an hour, when it only indicated $98^{\circ} 0$.

The Philological Secretary then read a letter received from J Beames, Esq., Twickenham, near London, on the proposed edition of the Poems of Chand.

"With reference to the discussion on Chand which took place at last February's meeting, at which I was present, it may interest some members to know that I have found in the Royal Asiatic Society's library two very fine MSS. of the Prithvirájá-rása, which I have commenced copying and collating. The differences between the two MSS. are slight, chiefly in the spelling which, as in all Hindi work is very unsettled. One, which I call MS. A, is in one volume bound in kinkháb, and prefaced by a beautiful picture of Prithvi Rájá in a warrior's costume. It is by a native artist, and for delicacy of execution is not surpassed by anything of the kind I have ever seen. It contains 65 prastávas, or cantos, with the headings and conclusions in red. It was written at Kotah, and completed on Thursday, Byas Sudi 8rd, Sambat 1883, by order of Mahárájá Kishor Siñh, and was presented to the Society by Major Caulfield, November 3 1827, which must have been very shortly after it was written. It is the work of three scribes. The first, who writes in rather a Marwáti hand, has copied the first 18 prastávas, down to the end of the famous "Anangapála Dillidán." The second, who writes a large coarse hand more of a Delhi type, takes from the 19th or "Mádho Bhát Katl" to the 36th or "Hansavatí viváha" inclusive. The third is of an unequal hand, sometimes carelessly, and sometimes very neatly written, more Marwáti than No. 2, but not so much so as No. 1. It finishes the work. This is a magnificent MS., quite complete, and in perfect preservation, on thick Siálkotí paper.

"The other MS. is in three volumes, in a clear Marwáti hand, on the



*Scale 1/2 inch
Pottery and Iron remains found in Cromlech.*

ish paper, no date, or writer's name, and contains MS. pencil notes by Col. Tod, not of much value. I am forming my text on MS. A, and noting in the margin any important variants from B. These are probably the only MSS. of the Prithviráj in England; I have carefully searched through the India office library, but neither I nor Dr. Hall could find one there. I hope to bring out to India good materials for an *editio princeps* of Chand. I hope the Society will not let the question of the MS. which is in the Agra College drop, as I hope still to fulfil my promise to edit it. Chand's dialect, however, is very peculiar: it is the Bhatti dialect of Sirsá and Hási Hissár, forming the genitive often by रा, रे, and री, instead of का, &c.; and abounding in unnecessary and inorganic 'anusváras,' in which respect it approaches more to Panjabi and Sindhi.

If you think these notes will interest any one, please read them at the next meeting.'

The President then said it would be in the recollection of the members that at a recent meeting of the Society, very interesting reports were read describing the discovery of Cromlechs in the Coorg district, as well as of curious remains of pottery, and of iron implements in these enclosures. The importance of ascertaining the names given to these enclosures by the people, and thus possibly tracing their origin by tracing the origin of the terms used to describe them, if these were not modern, was then insisted on. No information on these points was given in the reports read, and he had therefore written to Mr. Bowring, the Commissioner of Mysore, requesting enquiry on these points. He had received a reply, which he would read to the Society.

Bangalore, 2nd September, 1868.

'I have the pleasure to enclose a reply from Captain Cole to the question put in your letter of August 14th. I do not think that much information is to be obtained from the Coorgs on the subject of these Cromlechs or Kistvaens, as they were till lately a very rude and illiterate race, without any reliable history, and the remains of antiquity which exist in the district seem to be known by the name which all Hindus assign to such relics, when they are at a loss to designate them properly. Nothing of value has been found in the Cromlechs; but the pottery is evidently of an ancient type, while the existence of bones in the enclosures would seem to indicate that

they were burial places. Should any reliable information be obtained, or should any interesting discoveries be made, I will write to you again.'

Captain Cole writes to Mr. Bowring as follows :—

'In reply to Dr. Oldham's queries, I have the pleasure of forwarding the following information regarding the names used in Coorg for the Cromlechs or Kistien-vaen.

I find that there are two names and two traditions regarding them. The majority call them in the Coorg dialect, *Pándu-páre*, which means the *stone* of the Pándus. The Coorg dialect, as shewn in my grammar, bears the strongest affinity through the Malayalim to the Tamul language ; and in Tamul, *páre* also means *a large stone*. The Moplahs of the Malayalim country call these structures "*Pándu-porre*," and *porre* means *a small hut*. Such structures have not, I believe, ever been found in the Malayalim districts. The other name for these structures is *Pundara-mane*, or the *house of the Pundaras*, a legendary Pygmy race, sometimes confounded with the descendants of the Pándus. Both these terms have been traditionally handed down.

With regard to Dr. Oldham's opinion that these structures are more of the type of Kistvaens of Celtic Europe than of the true Oromlech or Dolmen, it appears to me that we have both in Coorg. Those found buried and consisting of a regular stone cist are doubtless Kistvaens ; but I have found some with the top slab resting on two or more rough stones or boulders at each end. I have just discovered four of a remarkable type, situated in the middle of the forests about 13 miles from here towards Somwarpett. They are large stone chambers erected on the top of a low hill and on the very rock from which the slabs had been quarried. They have all entrances of a shape as shewn on *Plate 2* of the Proceedings of the Asiatic Society of Bengal for June last, or a circular hole in the centre of the slab. They stood out in high relief, each on the top of a low mound, the base of which had a circle or concentric circles of stones all round. They were perfectly empty, and looked like temples or altars ; and bearing in mind what Cæsar, Pliny, and Tacitus, have said of the human sacrifices offered by the Druids, and what we know of such sacrifices in India, the idea of an altar is borne out by some of these structures.

In others near Ramasammy Kunve, I have just found some beautiful small goglets in black pottery and glazed, a basin, some large urns, and a large round pot with three short pipes projecting out, as if used for

distilling. I have also found large fragments of bones, and a piece of a human jaw with two teeth in it.

I hope soon to send you the drawings and a regular report.'

Fraserpett, 29th August, 1868.

It would seem from this, that little hope existed of being able to trace out the history of these curious remains by any investigation of the names or words applied to them, which were all of modern construction.

The discovery alluded to in the last sentence of Captain Cole's note was among the most important yet made, and he had solicited that, if possible, the portion of human jaw referred to, might be forwarded to Calcutta for comparison.

The President further said, that he had brought down to the meeting a volume of the Transactions of the Literary Society of Bombay, in which a very interesting account was given of curious remains of a somewhat analogous character, which occurred a little more to the south than Coorg, namely, near the Palghat. The title of the paper was one which would scarcely lead any one merely consulting the Index to suppose that it related to such rough structures of stone of a rude and early age. It was entitled, "On the Pandoo coolies of Malabar," the word coolies here being a corruption of the word *Kúl* or *Kúll*, signifying a stone. He did not mean to refer to the interesting details given in the paper, but simply to direct attention to the plates which accompanied it, and which gave excellent representations of the pottery, glass beads, iron implements, &c., found in these Kulls, and of the mode in which they were originally placed in them. The remarkable fact was, that there was not among them a single object, which could not be paralleled by objects similar or even identical in shape, material, &c., found in many places in Northern Europe. The character of these articles would indicate a time more advanced in the arts and civilization than those of the people who constructed the Cromlechs and Kistvaens of Coorg. But it did not necessarily follow from this, that they were of later date. Two tribes, or even portions of the same race, might readily have existed contemporaneously, but in very different stages of progress in the arts, &c.

The President then said, he had much pleasure in laying before the meeting a paper by Mr. F. S. Growse, C. S., Fatigurrh, on *the Poems of Chand*, of which communication the Philological Secretary would only give a short abstract, as it was to appear in full in the Journal.

Bábu Rájendralála Mitra said :—

“ After adverting to the circumstances which led to the enquiry regarding the Agra MS. of Chand's Poems, the author gives, first, a brief account of the size, extent, and character of the Agra MS., and then of another lent to him by Bábu Sivaprasad of Benares from the Library of His Highness the Mahárájá of Benares. The latter comprises 786 pages, and appears to be a continuation of the work noticed in the July Number of the Society's Proceedings. It is divided into two parts, one of which is devoted to Mahoba, and the other to Kanouj, and contains altogether 38 Cantos. The narrative is described to be “ very abrupt in its transitions,” and laconic in its allusions to past events; the language most archaic, and the text exceedingly corrupt. This is followed by a translation of the first Canto of the work, giving an account of the origin of Rájá Chandra Brahma. The story opens with Rájá Ananga Pál's causing at the suggestion of Vyása an iron spike to be driven from the surface of the earth down to the head of Váski, the great serpent which supports the sphere on its head. The belief was that as long as the spike would remain in its place, so long would the sovereignty of the Tomars last on earth. But Váski, pained by the spike, sent his brother Takshak to cheat the king, who caused the spike to be pulled out, and found that its end was smeared with blood. This is followed by an account of Vyása's foretelling how the sovereignty of the Tomars would be overthrown by the Muhammadans, and then an account is given of a deception practised by the moon on a Brahmin woman, named Hemaváti, and the issue thereof. The paper concludes with an extract from the Poem, as a specimen of Chand's style.”

The Secretary announced the receipt of the following communications :—

The Poems of Chand, by F. S. Growse, Esq., C. S., Fatigurrh.

On Pandanophyllum and allied genera, by S. Kurz, Esq.

LIBRARY.

The following books have been added to the Library since the last meeting :—

. Names of donors in capitals.

Presentations.

Proceedings of the Royal Society, Vol. XVI. No. 103.—THE ROYAL SOCIETY OF LONDON.

edings of the Royal Geographical Society, Vol. XII. Nos. 2,

.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

in de la Société de Géographie, Juillet, 1868. — THE GEOGRAPHICAL SOCIETY OF PARIS.

de L'Académie Impériale des Sciences Belles-Lettres et Arts
aux, 3rd Série, 29th Année, 1867.—THE IMPERIAL ACADEMY
EAUX.

ndlungen für die Kunde des Morgenlandes, herausgegeben von
tschen Morgenländischen Gesellschaft, Band V, No. 1.—THE

hrift der Deutschen Morgenländischen Gesellschaft, Band
I, II.—THE SAME.

ires de L'Académie Impériale des Sciences de St. Péters-
th Série, Tome XI, No. 918.—THE IMPERIAL ACADEMY OF ST.
OURG.

in de L'Académie Impériale des Sciences de St. Pétersbourg,
II, Nos. 2—5.—THE SAME.

edings of the Third Annual Meeting of the Scientific Society
arh.—THE SCIENTIFIC SOCIETY OF ALLIGURH.

h i Hindustan.—THE SAME.

t of the Canning Institute for the Sessions 1866—1868.—
NNING INSTITUTE.

uteurs Hindoustanis et Leurs ouvrages, d'après les Biographies
es par M. Garcin de Tassy.—THE AUTHOR.

rag Ueber die Phonetik der Tibetanischen Sprache, von Dr.
eschke.—THE AUTHOR.

an Anthropology, by Dr. J. B. Davis.—THE AUTHOR.

rmese Hand Book of Medicine by Dr. F. Mason.—THE

die ursprüngliche Bedeutung des Wortes Brahma, by Dr. M.
—THE AUTHOR.

t on Past Famines in the North-Western Provinces by C. E.
lestone.—THE CURATOR GOVERNMENT BOOK DEPOT, NORTH-
N PROVINCES.

rt on the Annual Examination of the Thomason College,
e, 1868. — THE PRINCIPAL, THOMASON COLLEGE.

yanam, Vol. I, Part I., edited by Pandita Hemachandra Bhat-
a.—THE EDITOR.

The Calcutta Journal of Medicine, Vol. I, No. 7.—THE EDITOR.

Report of the Insane Asylums in Bengal for 1867.—THE GOVERNMENT OF BENGAL.

Report on the Administration of the Central Provinces for 1867-68.—THE CHIEF COMMISSIONER OF THE CENTRAL PROVINCES.

Selections from the Records of the Government of India, Home Department, No. LXIV.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

Selections from the Records of the Government of India, Foreign Department, No. LX.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

Purchase

Revue des Deux Mondes, July and August, 1868.

Revue Archéologique, Juillet, 1868.

Revue et Magasin de Zoologie, Nos. 6 and 7, 1868.

The Annals and Magazine of Natural History, No. VIII. 1868.

Journal des Savants, 6 and 7, 1868.

Comptes Rendus, Tome LXVI. Nos. 24—26, and Tome LXVII. Nos. 1—4.

The American Journal of Science, Nos. 184 and 185.

Pratna Komra Nandini, Nos. 13 and 14.

Reeve's Conchologia Iconica, parts 272 and 273.

Hewitson's Exotic Butterflies, part 67.

Böhtlingk and Roth's Sanskrit Wörterbuch.

Thomas' Sassanian Coins.

Spencer's Principles of Biology, Vols. 1 and 2.

Spencer's First Principles.

Spencer's Essays, Vols. 1 and 2.

Spencer's Social Statistics.

Spencer's Education.

Dr. F. Watson's Index to Names of Eastern Plants and Products.

Elliot's History of India, Vol. I.

Exchange.

Athenæum for July, 1868.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR NOVEMBER, 1868

tant to notice to that effect, a Special General Meeting of the
was held on the evening of the 4th of November, 1868, at
P. M.

dharm, Esq., LL. D., in the chair.

President said, it would be quite unnecessary that he should
to any detailed history of the long protracted correspondence,
ussions which had led to the result they were asked to ratify
votes this evening. He would not detain them by any
to earlier parts of this history, but simply state that, at the
g of 1864, there appeared a fair prospect of final success, and
eral vote of the Society at large, the Council were then fully
ed to treat with the Government of this country, in accord-
h the general terms set forth in the correspondence then sub-
o the Members. Armed with this authority the Council had
and had finally brought the contract to an issue, which
t, without hesitation, say was highly advantageous to the

rrangement was very briefly this. The Society hand over to
, appointed under the Act of the Legislative Council of India,
mbodies these arrangements, (Act XVII. of 1866), the
is which they now possess of Natural History, of Antiquities,
iscellaneous objects, as well as any additions thereto which
r obtain. The Government undertake to erect a commodious
, specially adapted to the purpose, to provide for the payment
tenance of an efficient staff of curators, taxidermists, &c., and

for all costs of the management of such Museum. All the collections of the Society as well as additions, are to be marked with a distinctive mark, so that if, unfortunately, any severance of the Society and of the Museum should be necessary, the Society could reclaim all such collections of its own as were then existent. To the Society also has been granted the right of nominating four Trustees out of thirteen, thus giving to this body a very powerful interest in the management of the Trust. In this way, the Council have been able to secure the permanent maintenance in this city of a Museum, in some degree worthy of the name, of which the collections of the Asiatic Society form the most important nucleus: they have secured these most valuable collections from the destruction which from the want of proper room or sufficient funds for their maintenance was rapidly seizing hold of them; and the Society has at the same time been relieved from all or any expenditure for this purpose.

Further, the Society retain their valuable library intact; their collections of coins, of manuscripts, engravings, maps, &c., and the paintings and busts which ornament their rooms. Such is the agreement. In full confidence that they would, under the circumstances, meet the ready support of the Society at large, they have further provisionally handed over the collection to the charge of the Trustees nominated under the Act. It was impossible to do this formally, at once, because the Act required that careful lists of all the specimens should be prepared, and that one copy of such lists or inventories should be kept by the Council of the Asiatic Society, and another should be kept by the Trustees of the Indian Museum. These inventories or Catalogues, have lately been completed with much zeal and great personal exertion by Dr. Stoliczka and Mr. V. Ball, both members of the Society, who have also lately been acting as Curators of the Museum. And the Council have therefore now demanded of the members at large, that this transfer should be formally sanctioned.

The necessary voting papers were issued to the Mofussil members on the 22nd August, 137 were sent out, 61 replies have been received. Of these, *one* only votes against this transfer.

I will now propose on the part of the Council, 'That the Council be authorized formally to transfer the Society's collections of Natural History, Antiquities and Miscellaneous objects, to the Trustees of the

Indian Museum appointed under Act XVII. of 1866, subject only to the conditions therein specified.'

This was put to the vote and passed.

The Meeting then resolved itself into an Ordinary Monthly Meeting.

The minutes of the last meeting were read and confirmed.

The following presentations have been received since the last meeting.

1. From the Government of India, Home Department—

A copy of Notes on the Races and Tribes of Avudh.

2. From Babu Gopinátha Sena.

A copy of the monthly means of the principal meteorological elements, &c., as recorded at the Surveyor General's Office, Calcutta, for 1866-67.

3. From the Magistrate of Mainpuri—

A copper spear head.

Two copper axes.

A few copper bangles.

The following letter accompanied the donation :—" The Magistrate of Mainpuri begs to inform the Secretary, Asiatic Society, that he has despatched to him to-day some specimens of copper weapons or utensils which were found in this district buried in a field, and will be much obliged, if the Secretary will inform him if he can state what they are. They do not resemble any weapon or utensil now in use in this part of the country."

The President in exhibiting these implements remarked on the extreme interest attaching to them. One was a very fine specimen of a flat celt, identical in shape and general character with many found in North Europe. The material of this, he believed, was, as stated, copper; there had been no time to test the presence of other metals, but judging both from the colour and softness of the metal, as well as the colour of the coat of patina on the specimen, he thought it was copper. Another of the specimens appeared to be a spear-head of peculiar form; the sides of the implement being cut into a series of pointed teeth, pointing downwards, and projecting from the central rib, somewhat in the way in which the teeth of a saw-fish do. With these were a number of rings, which were, he thought, obviously old

bangles, or wristlets ; but these were identical in form with what for very many years, antiquarians in North Europe had been wont to call 'ring-money.' There was also another flat piece of metal, the use of which was not so obvious.

The great interest attaching to these specimens was this—that, so far as he was aware, this was the first instance in which the occurrence of any such implements composed of either copper or brass or bronze was known in this country. There is a record of one instrument of brass or bronze, which was believed to be in the Society's collection, but which he had not been able to find, but, with this exception, there was no record of any such instruments of bronze or copper, known, as from any part of India.

The only statement which the sender had given as to the circumstances under which they were found was, that they were "buried in a field near to Mynpoorie." More detailed information had been sought, and if obtained would of course be laid before the Society. He would also have the instruments tested as to whether they were really of copper.

4. From J. Kertich, Esq., Government School-master, Proma, through Dr. J. Anderson—

A palm leaf Burmese manuscript, the life of Gautama, written 40 years ago

A palm leaf Burmese manuscript, Wise sayings of Kandonweng Priest.

A palm leaf Burmese manuscript, One of the 550 Zut-lives of Wee-too-rah.

The following gentlemen duly proposed and seconded at the last meeting were balloted for as Ordinary members :—

Captain W. A. Holroyd, Director P. I., Panjab.

J. Pearson, Esq., Inspector of Schools, Panjab.

Lieutenant H. H. Cole, R. E.

J. Geddes, Esq., C. S., Magistrate and Collector, Chittagong.

The following gentlemen are candidates for ballot at the December meeting :—

J. B. Macauliffe, Esq., C. S., Multan, proposed by the President seconded by Dr. Ewart.

J. E. Cooke, Esq., Deputy Accountant General, Bengal, proposed by J. T. Wheeler, Esq., seconded by the President.

he President laid on the table, the report of a Sub-Committee appointed to revise the rules of the Society. The Members were aware, it had been announced to the Society, that a Sub-Committee had been appointed, and that to it, some propositions which had been made in relation to alteration in some of the rules, had been referred for consideration on the general subject. This Committee, composed of two Members of the Society not Members of Council, and two Members of Council, had held successive meetings, and had considered the rules seriatim, as well as generally, and their careful and detailed deliberation had resulted in drawing up a revised set of rules, in which the principal alterations were alterations of arrangement, with also some changes in principle.

The Committee had met frequently, and on successive days, with a view to completing the important duty confided to them at the earliest practicable date, and they submitted their report sometime since. On account of the intervention of the holidays, and the consequent absence from town of many Members of the Council, had rendered it impossible to have, in the Council, that full and careful discussion of the proposed rules which was, in every point of view, desirable. The Council had gone through a portion of these proposed rules, and had made several changes, so far he might say chiefly verbal changes. But it was wished that the Council's report could have been laid before the meeting this evening. This was as he said impossible. It was therefore determined by the Council at its last adjourned meeting on the subject, held only the day before, to lay before the meeting the rules as proposed by the Committee, and ask the Society to allow the question to be brought up for final discussion at the Annual General Meeting. This meeting would not take place until the middle (or a little later) of January. And it was believed that there would be ample time to have the final report of the Council on these rules ready, quite in time to be circulated to the Mofussil members, so that the required two months shall elapse after the issue of the papers, before the Annual General Meeting.

It was of essential importance that this matter should be brought to a conclusion as soon as practicable, not only with a view to removing doubts as to what the rules of the Society are, but for another reason. The copies of the rules as now existing are exhausted; there are none to give to the new Members of the Society, while it would be

highly foolish to waste money in reprinting these rules, if they are to be supplanted by others in a few weeks. If the final decision, however, is to be protracted much beyond the date of the Annual Meeting, the present rules must be reprinted.

He would, therefore, ask the Society to adopt the plan recommended by the Council, under which the rules as proposed would be circulated for discussion in full time to hold the final voting on the question at the Annual Meeting in January.

This was put to the vote and carried.

The President then called on Mr. V. Ball to read his paper, *On the Flora of Mánbhúm*, of which the following is an abstract.

Previous knowledge of the Flora of Mánbhúm refers only to the northern portion of the district (in the vicinity of the grand trunk road), which has been visited by Dr. Hooker, Dr. T. Anderson, and others.

The district forms portions of three of Dr. Hooker's botanical provinces Behar, Bengál and Orissa.

The physical characters of Mánbhúm which exercise a marked influence on the flora, may be most clearly comprehended by dividing the district into a series of six zones.

The general aspect presented by the flora is disappointing: instead of finding a realization of one's ideal of a tropical jungle, the scenery is often excessively tame, and in the drier and cleared portions, almost park-like.

In the nearest approach to typical tropical jungle, that occurring on the hills of the Dhalbhúm frontier, there are no tree-ferns or palms and but few mosses, orchids, or herbaceous ferns. The character of the foliage and inflorescence are briefly described in the paper.

The vegetation of the low flat lands is susceptible of a four-fold division, according to the character of the ground which supports it; lists of the characteristic species are given.

Land which has been cleared for cultivation, it is remarkable to notice, has a flora of its own, both the trees and herbaceous plants being quite distinct from those found in the original jungle. Although the land may relapse into jungle, the occurrence of these species marks its antecedents.

flora of the tanks and jheels is interesting, as it so closely approaches in character to that of the ponds and lakes of Europe. A list of species is given.

A portion of the paper is concluded with a description and list of plants peculiar to the hills. The useful plants are those yielding drugs, fibres, dyes, lac, oil and timber.

The paper concludes with notices under these several headings, and of trees producing timber of known value.

Dr. Stoliczka then read his paper on *The Malacology of Lower Bengal and the adjoining provinces*. No. 1. On the genus *Onchidium*, with descriptions of new species. (Abstract.)

The author stated that the study pursued in conchology during the last few decades had clearly shewn the importance of the examination of the animals of Mollusca for all systematical purposes. The Indian and fresh water shells received a very fair attention from such conchologists as Mr. Benson, Mr. W. Blanford, and others; but as as yet little known of the respective animals. To supply this want, Dr. Stoliczka stated that he had undertaken to collect specimens for a series of papers, which would be specially devoted to the examination of the animals, and that he hoped conchologists would follow this course of inquiry, and favour him with living or dried animals of Molluscs.

The first of the series of papers had as subject the anatomical and descriptive details respecting the species of *Onchidium*, from the neighbourhood of Calcutta.

The type of the genus was described about 70 years ago by Dr. F. Cuvier as *Onchidium typhæ*, which is very common about Calcutta, though no record of its occurrence has been noticed since Buchanan's publication.

Dr. Stoliczka then spoke on some of the most important anatomical details of the type species, *Onchidium typhæ*, pointing out some of the errors into which former observers had fallen. He also stated that he had found in the neighbourhood of Port Canning three new species, which were described by him under the names of *Onchidium pallidum*, *O. tenerum*, and *O. tenebrum*. Several live specimens of the last named species were shown, and the drawings of all the species, and preparations of the teeth, were exhibited. A new species of *Onchidium* was said to occur

in Burmah. Of the closely allied genus *Vaginulus*, Mr. W. Theobald had described one species from Burmah, and Mr. G. Nevill lately obtained near Calcutta two small specimens of apparently the same species.

Mr. W. Blanford said that the study of the animals of the various Molluscs and especially those of *Onchidium*, was of the highest importance, and that he had no doubt that Dr. Stoliczka's labours in this line would be highly appreciated by conchologists. He had himself observed, he believed, at least two Indian species of *Onchidium* beside those mentioned by Dr. Stoliczka. All the *Onchidia* were found along the seashore or on the banks of tidal rivers, while the species of *Vaginulus* appeared to be terrestrial animals.

Dr. Stoliczka mentioned that the errors which had been made by former observers were chiefly due to the difficulty in preserving animals. Since Dr. Buchanan, only very few naturalists had the opportunity of examining live animals, and those preserved in spirit easily change their form so much, that it was extremely difficult satisfactorily to trace out the structure and the position of some of the internal organs.

Dr. Stoliczka also brought to the notice of the Meeting a paper entitled "*Remarks on the species of the genus Pandanus*;" by S. Kurz, Esq.

The object of the paper was a somewhat different grouping of the species of *Pandanus* from that recorded in botanical works up to the present date. Mr. Kurz divides the known species of *Pandanus* into five sections,—which may be said to have sub-generic value,—under the names *Acrostigma*, *Ryckia*, *Keura*, *Microstigma* and *Souleyetia*. Short characteristics of the various sections are given, and 27 species are enumerated in his list.

Papers received from the Public Works Department, reporting the occurrence of earthquakes in June last, were laid before the Society.

The Superintending Engineer of South-East Circle, Mr. Leonard, reports that "A shock of earthquake was felt at Sylhet at a few minutes past 12 o'clock, on the morning of the 30th June (29th-30th). There were three waves, rather abrupt, the second so much so as to shake the furniture." The shocks occupied about half a minute, and a tremulous motion continued for half a minute more in the direction of west-south-west to east-south-east. Slight shocks were also felt at

8 o'clock in the evening of the 29th June, and at 3 A. M. following morning, lasting each time 4 to 5 seconds ; but causing

Executive Engineer of Rajshahai division reports an earthquake on the same night at about the same hour, (midnight) et. It lasted for about a minute and three distinct shocks

The motion travelled from north-east to south-west. It so slightly at Rampore Bauleah, Malda, Nattore, Boggrah, and Rungpore. No damage was caused to the buildings. It is stated to have been "perceptible at Berhampore, but that few have felt it."

An earthquake is reported as occurring on the 31st July, at 4.45m. in the day. It was felt at Hazareebagh, where it is stated to have lasted 10 seconds, and appeared to come from the north-east. It was slightly felt also at Raneegunje. It appeared to be at Gobindpore, where the main wall of the Assistant Commissioner's Cutcherry was cracked, and the plaster fell off several of the verandahs. One of the walls of the 1st class road chokkee was cracked. Near Bugodhur, it was very perceptibly felt at 1 A. M. At Aymiahghat all the constables rushed out of building. It was felt also at Burrakur. It is stated to have preceded and accompanied by a loud noise resembling the hiss of an engine letting off steam, and is stated to have been from north-east toward the south-west.

Nothing unusual in the state of the weather or temperature is

Receipt of the following communications was announced :—

Notes on the Flora of Mánbhúm, by V. BALL, Esq., B. A.

On the Malacology of Lower Bengal, No. 1, by Dr. F. STOLICZKA.

Remarks on the genus Pandanus, by S. KURZ, Esq.

LIBRARY.

The following additions have been made to the Library since the last meeting.

. Names of Donors in Capitals.

Presentations.

Sitzungsberichte der Königl. Bayer. Akademie der Wissenschaften zu München, 1867, Heft III. IV.; 1868, Heft I—II.—THE KÖNIGLICHE BAYERISCHE AKADEMIE DER WISSENSCHAFTEN ZU MÜNCHEN

Abhandlungen der Philosophisch-Philologischen classe der Königlich Bayerischen Akademie der Wissenschaften, Band XLII.—THE SAME.

Abhandlungen der Historischen classe der Königlich Bayerischen Akademie der Wissenschaften XXXVIII. Band.—THE SAME.

Denkrede auf Heinrich August von Vogel.—THE SAME.

Almanach für das Jahr 1867.—THE SAME.

Ueber die Theorien der Ernährung der thierischen Organismen.—THE SAME.

Ueber die sogenannte Leukothoa in der Glyptothek Sr. Majestät König Ludwig I.—THE SAME.

Abhandlungen für die Kunde des Morgenlandes; Versuch einer hebräischen Formenlehre.—PROFESSOR DR. L. KRZHL.

Actes de La Société D'Ethnographie, 2e Serie, Tome I—II.—THE ETHNOGRAPHIC SOCIETY OF PARIS.

Mémoires de L'Académie Impériale des Sciences, Belles Lettres & Arts de Lyon, Classe des Lettres, Tome XIII.—THE IMPERIAL ACADEMY OF LYON.

Journal Asiatique, No. 42.—THE ASIATIC SOCIETY OF PARIS.

Bulletin de la Société de Géographie, Juillet, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Journal of the Royal Geographical Society Vol. XXXVII.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

Transactions of the Linnean Society, Vol. XXVI. Part I.—THE LINNEAN SOCIETY OF LONDON.

The Journal of the Linnean Society, Zoology, Nos. 36 - 41 and Botany, Nos. 39—47.—THE SAME.

Proceedings of the Linnean Society, November, 1868.—THE SAME.

al Report of the North-Western Provinces Exhibition held at
February, 1867.—GOVERNMENT NORTH-WESTERN PROVINCES.

irs of the Geological Survey of India, Palæontologia Indica,
No. 6.—GOVERNMENT OF BENGAL.

's Reports on Vernacular Education in Bengal and Behar.—
E.

al Report on the Geological Survey of India, Calcutta.—THE

al Report of the Administration of the Province of Oudh for
, 1867-68.—THE SAME.

ditto ditto of Coorg for 1867-68.—THE SAME.

ditto ditto of the Penal Settlement, Port Blair and Andaman
r 1867-68.—THE SAME.

istration of the Central Provinces for 1867-68.—THE SAME.

ue Administration of Mysore for 1866-67.—THE SAME.

al Report on the operations of the Post Office of India for
.—THE SAME.

Annals of Indian Administration in the year 1866-67, Vol.
ts I. and III.—THE SAME.

ions from the Records of the Government of India, Foreign
ent, Nos. LXV. LXVI.—THE SAME.

t of the Meteorological Reporter to the Government of Bengal
-68.—THE SAME.

t on the Races of Avadh.—THE GOVERNMENT OF INDIA.

Purchase.

des Deux Mondes, 15th August, and 1st September, 1868.

es Rendus, Nos. 5, 6, 7 and 8.

al des Savants August, 1868.

Archéologique, No. VIII. 1868.

lumismatic Chronicle, 1868, Part II.

nnals of Natural History, No. IX. 1868.

de Zoologie, No. 8, 1868.

d'une Faune Entomologique de L'Archipel Indo-Néerlandais

. S. Van Vollenhoven. III, 1st part. Famille des Pentatomides.

uche's Le Mahábhárata, Vol. IX.

on's India, Ancient and Modern, Part II.



1

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR DECEMBER, 1868.

An Ordinary General Meeting of the Society was held on Wednesday, the 2nd Instant, at 9 o'clock P. M.

T. Oldham, LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced —

1. From C. W. Wilmot, Esq. Rajmahal, *a piece of sandstone with impression of Palæozamia.*
2. From J. A Cockburn, Esq., Superintendent, Barrackpore Park, *specimen of Python Molurus.*
3. From the Rev. E. Stewart, *A copy of Santali grammar, and copy of the Gospel of St. Matthew in Santali.*
4. From J. Burgess, Esq., Poonah, *Notes on a visit to the Satrunja Hills.*
5. From the Surveyor General's Office, *two maps of Turkestan with adjoining portions of the British and Russian Territories.*

The following gentlemen duly proposed and seconded at the last meeting, were balloted for and elected Ordinary Members :—

M. Macauliffe, Esq., C. S.

J. E. Cooke, Esq.

The following gentlemen are candidates for ballot at the January meeting :—

Dr. P. F. Bellew, Deputy Assay Master, Calcutta Mint, proposed
Col. H. Hyde, seconded by Mr. J. F. Wheeler.

A. Cadell, Esq., C. S., Mozuffernagur, proposed by Mr. Irwine,
seconded by the Secretary.

Ch. C. Adley, Esq., Executive Engineer, P. W. D., proposed by the President, seconded by the Secretary.

Dr. T. Dukas desires to withdraw from the Society.

The following letter from B. W. Colvin, Esq., Magistrate of Mainpúri, with reference to the copper weapons, laid before the last Meeting, was read :—

7th November, 1868.

“The copper weapons mentioned in your letter of the 5th instant, were found by a cultivator, whose plough struck against them in passing through his field.

“He described them to me as lying littered together in a heap without order, and not enclosed in any vessel or receptacle. They were, of course, at no great depth below the surface.

“This is all the information I could gather from the man who found them. I have not had an opportunity yet of visiting the place myself where they were found, but I shall have shortly ; and if you will let me know any special points on which further information is desirable, I will do the best I can to procure it.”

The receipt of the following communications was announced—

1. *What was the Sundarbun originally, and when, and wherefore did it assume its existing state of utter desolation?* by H. J. Rainey, Esq.

2. *On the Results deducible from the observations made by order of the Secretary of State for India, at Guntoor, on the late Eclipse of the Sun,* by Major J. F. Tennant, R. E., F. R. A. S.

3. *Notes on a Tour in Northern Abyssinia, and specimens collected in Abyssinia,* by W. T. Blanford, Esq.

4. *The Total Eclipse of the 18th August 1868, observed by the Austrian Expedition,* by Dr. F. Stoliczka.

5. *Description of New Marine Mollusca from Ceylon,* by Messrs. G. & T. Neville.

Mr. Blochmann then said—

Among the books purchased during last month, by the Society, there is a copy of a Persian Dictionary, entitled *Sirájullughát*, in two volumes. This Dictionary was compiled in 1734, by Sirájuddín 'Alí Khán Arzú, a poet and noble of the court of Dihlí. The Society, I think, has been fortunate in getting this rare book at the low price of Rs. 45. The copy itself is but fair, like the MS. of this work

in the Fort William College Library. A third copy is at

on several occasions drawn attention to the importance of MSS. of Persian lexicographical works. There is a two-
n. *First*, the authors of the best dictionaries are Indians, their works have found their way into the libraries of
secondly, the best Persian dictionaries are written towards the 17th and during the 18th centuries, when the rapid down-
Mogul dynasty, and the introduction into India of the
nting, caused a considerable decrease in the demand for
Hence the fact that our libraries contain more MSS. from the time of Akbar to Sháhjahán, than MSS. written in the 18th century. Adding to this the difficulty of copying such dictionaries, we cannot wonder that lexicographical MSS. are scarce days, even in India, where they were written, exceedingly

53 dictionaries which during thirty years were collected by
at the expense, of the Emperor Akbar, for the compilation of a dictionary entitled *Farhang i Jahángírá*, about *eight* still exist, but our Society has but *three*. So rapid has been the destruction of MSS. during two and a half centuries."

liczka desired, before the ordinary business was completed, to draw the attention of the Meeting to a few very curious specimens of the remarkable coral *Sagartia Schilleriana*. He told us that he had lately found large numbers of that species in the Bay of Bengal, where, during low water, the animals remain for many days exposed to the sun.

liczka also exhibited live specimens of *Nanina pollux*, *propinqua*, both clearly shewing the pulsations of the heart. In the former species, the pulsations were about 46 *per minute*; in the latter about 50. When the animals retire for a longer time to the bottom, the pulsations greatly diminish. In the case of *Helix* they were reduced from 50 to 17 *per minute*.—

The President then asked the Secretary to read the first paper for the evening.

What was the Sundarban originally, and when, and wherefore did it assume its existing state of utter desolation? By H. J. RAINEY, Esq., Khowlnah, Jessore. (Abstract.)

The writer states that he advisedly adopts this interrogative form of title, desiring to elicit information rather than to attempt to dogmatize. His wish is to ventilate the subject, so that a satisfactory solution may finally be arrived at. Such a solution he believes would be of practical value also as affecting the extent and character of the various works for reclamation or improvement of the Sundarban.

The author then proceeds to shew that the Sundarban "originally" was not only populated, but apparently equally, if not more, advanced in civilization than the country lying immediately to the northward of it. The remains of temples, mosques, and other buildings of much symmetry and even magnificence, are supposed to prove this. These appear to have belonged to both Hindus and Musulmans, though the latter predominate.

It then proceeds to discuss the history, so far as known of this tract. In the reign of Akbar, (16th century) "Mahárájah Pratápáditya established a magnificent city (founded by his father and uncle, Mahárájah Bikramaditya and Rájah Bosontorí respectively) in the grant of one Chand Khan, (who dying without heirs, his property was escheated by the paramount power, Nawáb Dáúd, and transferred to the said Mahárájah and Rájah,) in what may now be considered the 24-Parganah portion of the Sundarban, then appertaining to Jessore. This Mahárájah Pratápáditya became so powerful as to exercise sway over all the Rájahs of Bengal, Behar, and Orissa, including even Assam. His great successes induced him to refuse to pay his tribute, and to throw off his allegiance to the Great Mogul. For many years, he succeeded in defeating the armies sent against him. The first general sent was Abram Khan, whose army was nearly annihilated near the fort of Mutlar(? Mutlah, now Port Canning)*. Twenty-five other generals are stated to have been

* "The high embankment, or rather the remnant of it left, not far from Canning, is very likely the remnant of the road which led to this fortress; or probably debris of the fortification (or *garb* as termed by the natives); for such appear in Lower Bengal to have been built simply of mud."—*The Author.*

The general Abram (?) Khán is not mentioned in the histories of Akbar's reign. For the facts mentioned in the following sentence the author should have specified his sources.—THE GENERAL SECRETARY.

defeated in succession. Finally the Mahárájah Pratápáditya surrendered himself a prisoner, and was sent to Delhi in an iron cage. He died at Benares on the way.

The author shews that at the time of Pratápáditya, though parts of the Sundarban were populated, a great portion was still wild and uncultivated, and thinks, the vast progress in improvement was owing to the great exertions of these princes; and that the impetus given by them, gave way with the imprisonment and death of the Mahárájah. Subsequently only the very best and most favorably placed portions of the district were cultivated. In addition, the place was exposed to predatory incursions of piratical Mugs, and even of Portuguese Buccaneers,—quite sufficient to scare away a timid and probably disunited population.

There remain yet to be considered the effects of a cyclone, and its storm-waves. This occurred in Calcutta in 1737, when a wave 40 feet higher than usual, came up. Such would have been sufficient to produce an almost total loss of life in the Sundarban, and its consequent abandonment.

The author thinks the true name is Sundarban, or beautiful forest, ~~as~~ preferable to Sundriban, Soondree forest; or Sundar band, beautiful *band* or embankment; or Somudro ban, the Sea Forest. He thinks the name is of recent origin as applied to the entire district. A record exists of many well-known places described as belonging to zemindarees.

The author concludes by briefly summing up his views, and stating that the country suffered severely from the attacks of Mug pirates and the Portuguese, who finally effected a footing in the country, and that a terrific gale or Cyclone, probably that in A. D. 1737, accompanied by a storm-wave, passed over that tract of country on the sea-board, now known as the Sundarban, resulting in the most awful destruction of lives, and devastation of properties, which caused the few remaining survivors to totally abandon the place, and move northwards, where finding sufficient surplus land for their habitation and cultivation, they never returned to the south.—

The President then invited discussion on the paper.

The Rev. J. Long stated that when in Paris in 1848, Monsieur Jomard, the head of the Geographical Department of the Bibliothèque

Royale, shewed him a Portuguese Map of India more than two centuries old in which the Sundarban was marked off as cultivated land with five cities therein. This was confirmed by a Map in De Barros' *Da Asia*, a standard Portuguese history of India. The libraries of Portugal would be worth searching for further information.

He had twenty years ago examined Tarda, a town not far from Port Canning, which was the port of the Portuguese before Calcutta was founded; it was once an emporium of trade, and ships must have sailed up by the Mutla, but no ruins now remain. He had seen, 40 miles south of Port Canning, a fine Hindu temple two centuries old.

At the request of the Hon'ble J. Colvin, late Lieutenant-Governor of the North West Provinces, he had published, 16 years ago, in Bengali the life of Rájah Pratápáditya, called in the original "the last king of Saugor Island;" he lived in the days of Akbar, and built a city in the Sundarban, the remains of which are to be found at Ishwaripur.

The Portuguese slave-dealers and Mugs led by their devastations to the depopulation of the Sundarban. Cyclones also did their work; one swept over Saugor Island, in 1680, which carried away more than 60,000 people. The Mugs, as late as 1824, were objects of terror even to Calcutta, and in 1760, the Government had a *band* thrown across the river, near the site of the Botanical Gardens, to prevent them and the Portuguese Pirates coming up.

The Asiatic Society ought to petition Government to send an exploring expedition to the Sundarban.—

Mr. Blochmann said—

"I think the deserted state of the Sundarban is due to the incursions of the Portuguese and the Mugs rather than to cyclones.

The first cyclone known to me is mentioned by Abulfazl in the third book of the *Aín*, where he says—'The Sarkár, or district, of Baglá, extends along the seacoast. The fort of the Sarkár is surrounded by a forest. From new moon to full moon, the waves of the sea rise higher and higher; from the fifteenth to the last day of the moon, they gradually decrease. In the 29th year of the present era (A. D. 1585), one afternoon, an immense wave set the whole district under water. The chief of the place was at a feast; he managed to get hold of a boat, whilst his son Paramánand, with a few others, climbed up a

Hindu temple. Some merchants got on a *Tálár*.* For nearly five hours the waves remained agitated ; the lightning and the wind were terrible ; houses and ships were destroyed ; only the Hindu temple and the *Tálár* escaped. About two hundred thousand souls perished in this hurricane.'

Abulfazl does not mention the northern boundary of the district of Baglá ; but it cannot have come up as high as Calcutta, because Calcutta, or the *Mahall of Kalkattá*, as it is spelt in the *Áin*—very likely the oldest book in which our Capital is mentioned—belonged, at Akbar's time, to the Sarkár of Sâtganw, near which the Portuguese had founded the town of Húglí (Hooghly), which name also occurs in the *Áin*.†

Now the Cyclone of 1585 could not have been the cause of the devastations in the Sundarban, because Abulfazl, eleven years later, in 1596, mentions four towns as belonging to the Sarkár of Baglá, viz., Ismá'ilpúr, commonly called Bagláchín‡ ; Srírámpúr ; Sháhzádahpúr ; 'Ádilpúr. These four places must have been of some importance, because the district then paid a revenue of nearly seventy lakhs of *dáms*, i. e., nearly 180,000 Rs., and was besides liable to furnish 320 elephants, and 15,000 zamíndárí troops. It would be of interest to know whether the Portuguese maps, alluded to by Mr. Long, or some old East India Office Records, mention these four towns. *De Barros*' Map, and *Rennel's* Map of 1772, contain nothing ; and we may at present assume that the ruins of towns discovered in the Sundarban, belong to some of the four towns. It is noticeable that three out of the four towns have Muhammadan names.

There is a difficulty connected with the name of *Baglá*. The Manuscripts of the *Áin* which are in my hands, give a *B* as the first letter of the name. But the author of the *Siyar i Mutaakhkharin*, who copies the above record of the cyclone from the *Áin*, has *Húglá* (هوگلا), instead of *Baglá* (بگلا), and distinctly asserts that the

* A wooden house built on 4 pillars, often erected near palaces and temples. The musicians used to play on it.

† I mention this, because Stewart, in his History of Bengal, lays an undue stress on the fact that the name of Húglí does not occur in Faria de Souza's History of the Portuguese in India (1695). The name occurs in the *Áin* (1596), and several times in the *Pádisháhnámah* ; vide ed. Bibl. Indica I, p. 433, where the capture of Húglí by the Moguls, on the 12th June 1632, is described.

‡ The last syllable of this name is somewhat doubtful. Several MSS. have only *Baglá*.

coast of Lower Bengal was thus called from *huglá*, a weed used for thatching houses. But he wrote two hundred years after Abulíal, in 1780.

The second great cyclone occurred, according to Mr. Long, in 1680. The third hurricane, known to me, took place in 1737, during which, according to the Gentleman's Magazine of that year, the English settlement of *Golgota* [Calcutta] severely suffered.

But in 1737 the Sundarban was deserted.

That the eastern part, at least, of the Sundarban was chiefly devastated by the Mugs, is also asserted on Rennel's Map of Lower Bengal of the year 1772, where the words "Depopulated by the Mugs" are written over the tract between Long. 90° and 91°, south of Bâqirganj (Backergunje).^{*} The name of *Fringy Cally* (Long. 89° 25') which on his map is given to one of the numerous branches of the Ganges, clearly belongs the 'remains' of the Portuguese."—

Babu Protap Chunder Ghose, Assistant Secretary, then read the following note :—

"As I have the supervision of the printing of a Historic Romance in Bengali, which gives an account of Pratápáditya's dealings with the Portuguese adventurers, I had occasion to look up some books, in order to authenticate certain facts therein referred to. In my search for them, I had to investigate the history of the Sundarban. The few notes I have taken down in connection with the subject, I will read out to you.

The earliest mention of that portion of Lower Bengal which is now known as the Sundarban, is in the Ramáyana. It is in connection with a legend relating to the origin of the river Ganges. How the numerous sons of Sagara, one of the many universal monarchs of ancient India, were reduced to so many handfuls of ashes by Kapilá's malediction, is known to every reader of the Rámáyana. How Bhagiratha, a mere boy of fifteen, by his devotion and prayer, pleased the goddess Gangá to come down to earth, and how Gangá divided herself into a hundred branches, before she entered the sea, is likewise known. I may mention that the Sanscrit name for sea is connected with the name of the universal king Sagara.

^{*} Vide also Col. Gastrell's Geographical and Statistical Report of the Districts of Jessore, Fureedpore and Backergunje, Calcutta 1868, p. 25.

mention is made of any other events having happened on the coast of Lower Bengal. Names of no ancient cities, except *Bairakan*) said to have been situated there, are mentioned in the *Máráta* or the later *Puránas*. Modern Sanscrit literature is very deficient, both in geographical accuracy and historical authority. For authentic history we must look to the works of foreigners.

Arian's account of India, this portion of Bengal is mentioned in connection with the river Ganges. He gives the names of its branches, and mentions two cities, which he says are situated in *eltha*. It is difficult to identify them now.

Herodotus who preceded Arian in his description of the Indians, says very obscurely of the Ganges. In Arian's list of the tributaries of the Ganges, we recognise the *Sona* in *Soamus*. Herodotus' account of India is very general and limited to the North Western Provinces. Invasions of any consequence were from the west and north-India. So late as Manu, the lawgiver, the Ganges was regarded as the eastern limit of the country habitable for the *Áryas*. In the war of the *Mahábhárata*, the king of Bengal is several times mentioned, apparently to strengthen the retinue of the principal ruler. We pass over some centuries without finding any notice of Bengal.

At the time of the Arab invasion of India (8th century of the Christian era), Sulaiman came to this country. An account of his visit is given in the Bulletin of the Geographical Society of Paris. His account of the Delta of the Ganges is very meagre. All we gather from him is that this part of Bengal was then in a flourishing condition. There existed then many cities which traded with *Bairakan*. The Persian Historians of the Muhammadan rule in India are generally silent about Bengal, most of them being more or less connected with the court of Delhi. They have directed little attention to the history of the secluded portions of the Emperor's dominions in the East, which were always governed by one or more, more or less insubordinate, Viceroys. The little that was written by them, was either neglected or suppressed by the court followers. Al-Biruni passed down the Delta of the Ganges, but he has nothing to record regarding the *Sundarban*. He generally speaks of the

country as in a flourishing condition. In the 15th century, Niccolò Conti sailed up the Ganges and passed by a city named *Cernove*, which was on the river. This city, he mentions, was then in a flourishing state. He stayed for some time at *Buffetania* (*Burdowan*?). He visited *Racha*, a city on the banks of a river of the same name. On his way to the city, he crossed the Delta, where he found many good cities. *Racha* is evidently a misspelling of the Persian name *Rakkhat* (*Arrakan*).

Up to this time, we see, the jungles of the Sundarban did not exist. The earlier Portuguese writers unanimously assert that the Delta of the Ganges was much populated. Several cities are marked in De Barro's *Da Asia*, and two mighty rivers, flowing on the west by *Satigam*, (*Saptagram*, *Sâtganv*), and on the east near the city of *Chatigam*, (*Chittagong*), bounded the fertile Delta of the Ganges. In his map, he distinctly lays down three cities as situated within a few miles of the sea.

Mannuel de Faria de Souza in his "Portuguese Asia" says—"The Ganges falls into the sea between the cities of *Arigola* and *Pisalta* in about latitude 22° ". At another place he says, "The Ganges enters the bay about the Lat. 23° , between *Chatigam* and *Satigam*, 100 leagues distant." He describes the intervening country as much populated and in a flourishing state.

Dr. Fryer (1674), speaking of deserts in his 'Special Chorography and History of East India,' says: "Here are sandy deserts near the gulph of *Combaya* (*Cambay*), and beyond *Bengala* towards *Botan* and *Cochin China*, whence they fetch musk."

It is very difficult to state who first applied the name *Sundarban* to the jungle in the Delta. No early writer uses the name. The name literally means "the good forest;" but as some write it *Sunderband*, it means the good embankment." Some are of opinion that the plant *sundri* (*Heriteira littoralis*), which grows in great abundance in the Delta of the Ganges, has given the name of the forest. This appears probable, as a whole district is named *Hogla* from the occurrence of a reed (*Typha elephantina*) of the same name. I would propose another etymology. There lived in this part of Bengal a semi barbarous tribe named *Okandabhanda*, very similar to the *Malangi* (salt manufacturers) of the

present day. Their condition was a little better than that of slaves. In a copper plate inscription found in lot No. 55 of Mr. Hodge's Map, near Backergunj, Madhava Sena, evidently a brother to Kesava Sena of the Senarajas of Bengal, made a grant of some villages, Bágule (Bogla, according Persian writers) &c., to a Brahman. With the villages, the king conferred on the recipient the right of punishing and employing the *Chandabhandas*, a tribe that inhabited the place. This tribe, I believe, gave the name to the uncultivated portion of the Delta, which they then occupied.

It is generally supposed that Portuguese piracy and Mug incursions in the 16th century devastated the whole country. Bernier (1655) speaking of Portuguese oppression, says—"They made women slaves, great and small, with strange cruelty, and burnt all they could not carry away. And hence it is that there are seen in the mouths of the Ganges so many fine cities quite deserted."

The remains of these fine cities are found in lots Nos. 116, 211, 165, and 146. Mr. Swinhoe has published a figure of the ruins lately discovered in lot 116. The temple is of the Buddhist type of architecture. In lot No. 146, there are brick ruins with terracotta ornaments. Most of the remains are on the banks of the Cobartak. Colonel Gastrell, in his "Geographical and Statistical Report of the Districts of Jessore, Purreedpore and Backergunge," speaking of old ruins, states—"But all inquiry failed; nothing could be found save the ruins already mentioned on the banks of the Cobartak river. The mud-forts entered in Rennell's Map on the banks of the Rabanabad or Goolaceepa river do not exist now-a-days."

To the oppression of the Portuguese pirates we must not wholly attribute the desolation of the Sundarban. It may only be true regarding the eastern portion. We know from history that several partial deluges occurred in Bengal. Two are recorded in *Siyar-ul-Mutakhkharin* in connection with Sirkar Hogla. The first and more furious of the two, happened in the 29th year of the reign of Akbur (1585). Two hundred thousand of the inhabitants are said to have been drowned. Another said to have occurred in the reign of Muhammad Shah (1737).

Such occasional deluges, accompanied by cyclones, by breaking up the embankments, may have destroyed some parts of Lower Bengal; the incursions of the Mugs may have done the same for

other parts. Portuguese pirates, Mugs, and occasional visitations of cyclones have acted together, to ruin the seacoast of Lower Bengal. The change, usually observed near the mouths of large rivers, must have likewise had a share in the general destruction.

With reference to the last cause of the desolation of the Delta of the Ganges, I would refer to what Mr. Ferguson says in the *Quarterly Journal of the Geographical Society* for 1863. But Sir Charles Lyell says, "Mr. J. Ferguson, in his paper on the Delta of the Ganges, differing from all writers of authority who preceded him, has argued that the sediment is thrown down in consequence of the overflowing river being checked by meeting with the still water of the jheels or lakes. In point of fact, however, the deposition of the coarser matter takes place immediately on the highest part of the banks where the water first begins to overflow, and before they reach those lakes which occur at a lower level in the alluvial plain on each side of the main river. The banks are of equal height and as continuous where no jheels exist."

Mr. Rainey, referring to the only historical anecdote connected with the Sundarban, mentions Rájá Pratápáditya. His authority is a Bengali work published under the superintendence the Vernacular Literary Society. The work is named "*The Life of Pratapaditya*." The author Pandita Haris Chundra distinctly states that his history is but an abstract, in modern Bengali, of a more elaborate work published by Ram Ram Bose for the College of Fort William. Ram Ram Bose in his work states that he describes the history of Pratápáditya as he has heard it told by old members of his family. For a more authentic history of the Rájá, particularly of his connection with the Emperor of Delhi, we must look to another work. The *Muhammadan Historians* do not even mention the Rájá by name. The *Siyar ul-Mutakhharia*, however, mentions one as Pratáparudra, which is evidently a misspelling of Pratápáditya. This prince was defeated in a battle by Rájá Mán Sing. The only written history of Pratápáditya is in the *Khutiya Charita*, a Sanscrit History of the kings of Krishnagar. There the author incidently mentions Pratápáditya as being taken prisoner by Mán Sing in the beginning of the reign of Emperor Jehángir, and carried off in an iron cage. On his way to Delhi, the Rájá died at Benares. The

romance, of which I made mention, describes the in-
the Rájá with one Sebastian Gonzales, a Portuguese pirate,
concert with Anupráñ, a brother to the king of Arrakan,
ster he had married, waged war against the king of Vaicala.

Gonzales is described, in De Souza's History, as a Portuguese
o left his employment and established himself in Sundeeep.

achandra, author of the Vidyá Sundara, has evidently taken
y from the Sanscrit work, as the very epithets of Pratápáditya,
the Sanscrit work, are repeated in the poem. Pratápáditya
owerful prince. The Sanscrit work states, there were twelve
gs of Bengal, all of whom were defeated by Pratápáditya, and
e the sole monarch of the Province.

d an army of 52,000 swordsmen, 16 chains of elephants,
thousand mounted soldiers. He disclaimed all allegiance
nperor of Delhi.

he old city of Jessore, there are still to be found ruins of the
d fort of Pratápáditya.

ecretary then read Major Tennant's paper :—

*Results deducible from the Observations made by Order of the
ry of State for India at Guntoor on the late Total Eclipse of
v. By Major J. F. TENANT, R. E., F. R. A. S., F. M. S.,
ntendent of the Observations.*

e Asiatic Society did me the honor of printing a pamphlet
tention to this Eclipse and explaining the objects of research,
hat some account of the results to which I have been led,
nteresting; and I feel that such an account is due.

proceeding further, I may say that, for the present, I accept
theory of the Sun that it is an ignited nucleus, solid or fluid,
ed by an atmosphere containing as vapours many substances,
e only know as solids. In such an atmosphere, subject
to enormous disturbances, the ordinary laws of equilibrium
d. The densest vapours must lie lowest, and they will more-
ottest. Any substances which can only exist in a state of
t a temperature of incandescence, must lie low, in the densest

part; for the outer portions of the Solar atmosphere must approximate rapidly to the temperature of space.

I have on one of my Photographs what I consider to be the image of this densest portion of the Solar atmosphere as an intensely luminous stratum, rather more than 7,000 miles thick. From this I conceive that the protuberances are formed.

One of those seen on this occasion is remarkable for its enormous height and its singular structure. It has been examined with Spectroscope and Polariscopes, and we have six Photographs of it exhibiting its marvellous structure. These have enabled me to form a theory of its construction as follows. From some cause, two violent jets of gas issued from points on the Sun's limb 20,000 miles apart, the more northern and larger of these was nearly perpendicular to the surface, the southern was inclined at about 40° to that surface: rushing through the luminous stratum, they carried off with them its lighter constituents, and meeting about 16,000 miles above the Solar surface, they joined. But the axes of these jets were not in the same plane: hence arose a rotatory motion in the whole, and gas and vapour, whirling in a vortex, rose to a height of 90,000 miles above the surface of the Sun. That gas was Hydrogen. If other gases were there, the traces were faint, and escaped my notice. The vapours of which I saw traces, were Sodium and Magnesium, the two lightest. Where I examined this horn in the upper part, I think I may safely say, Iron was absent; and if the gas had taken any of these with it, it had dropped them as it rose.

But this was a singular and exceptional phenomenon. Such violent outbursts seem uncommon even in the Sun, and, of course, the formation of a rotating column such as this, would be less so. Jets of gas ordinarily carry up with them portions of incandescent vapour forming with them columnar protuberances, and when, as would seem most common, the escape is still more gradual, bubbles of gigantic size are formed in the luminous stratum which are the ordinary rounded prominences. These are but of short duration. If an air-bubble on water be proverbially short-lived, how short would be the duration of a bubble merely covered with vapor, were that not prevented from subsiding by the constant fresh supplies of gas from below. Really broken in many places, the remaining clouds of vapour would

up by the escaping gas, much as a pith ball by a jet of water, so that they would settle down in small irregularly broken portions much in the same way as a flocculent precipitate.

My hypothesis will, I think, explain the existence and phenomena of protuberances. Where the gas (generally I should imagine hydrogen) comes from, is not the point. I believe it perfectly certain that it is somehow disengaged from the very solar surface or near it; as is present in the Great Horn. From what I have heard of the examinations by others, they too saw in every spectrum its presence though it was not identified (of course I am speaking of hand spectroscopes). I think, therefore, I may safely assume its general presence from the usual colour of the prominences.—

President then asked Dr. Stoliczka to read his note on *The Eclipse of the 18th August, 1868, as observed by the Austrian Expedition at Aden.*

Stoliczka said that he had received several reports on the subject from the members of the Austrian expedition, but as the principal features of that remarkable phenomenon have been repeatedly described, he would only draw the attention of the Meeting to a few observations of more general interest. This would add a little to the information already published in our Proceedings. The Austrian Government, upon a recommendation of the Academy of Sciences, sent three officers to Aden, Dr. E. Weiss, Lieut. Riha and Dr. Oppolzer. Aided by the most valuable and very kind assistance of Major Russel, and several other English officers at Aden, the members of the expedition completed all their arrangements in due time.

The weather at Aden on several days before the eclipse was rather variable and not very promising. The mornings were cloudy as well as the evenings, while during the middle of the day the heat was very great. On the morning of the 18th August, the clouds began to disperse only a few minutes before the first contact of the moon's shadow with the sun took place.

The work of the observation was divided in the following manner. Dr. Weiss undertook to observe (with a refractor of 6 inches) the position and the position of the protuberances; Lieut. Riha conducted photometric observations; and Dr. Oppolzer the luminous changes in the prominences, especially at their contact with the corona. In all

these points important results have been obtained. Besides the bright red corona, there were only three protuberances visible, the length and positions of which have been accurately measured. Of special beauty and interest was one of the protuberances, distinguished by a great length—(about 2 minutes, $= \frac{1}{8}$ th of the solar diameter). Its color was an intense carmine red, and it remained visible not only during the whole of the eclipse, but even one minute after it, when it was obscured by clouds. On places where the edge of the disc of the moon just covered the sun, appeared a beautiful red margin, being separated from the sun by a narrow bright zone. The corona exhibited in the appearance and arrangement of the various rays some similarity to that observed on the 18th July, 1860, in Spain.

The spectrum was not actually reversed during the eclipse, although the dark lines perfectly disappeared, thus producing a faded, so called continuous spectrum. A few seconds before the termination of the totality, the color of the greatest refraction nearly entirely vanished, while the bright red, the red and orange colors were quite sharp, the yellow less distinct, and the green hardly perceptible. The red tints remained visible with perfect distinctness and intensity; they did not pass into each other, being separated by clearly traceable dark lines. To measure the width of each of the colored zones was impossible, as the whole phenomenon only lasted from three to five seconds. The duration of the eclipse was according to actual observation 2 minutes, 55 seconds, considerably shorter than in S. India, or on the eastern coast of the Bengal Bay.

The Austrian officers, during their stay at Aden, made numerous other astronomical and meteorological observations, which will be published in a special report of the expedition. Two meteoroscopes were of great service, and by means of them the direction of the course of about 200 meteors was determined.

I may add that the photographers of the Prussian expedition who remained at Aden, took with great success several views during the eclipse.

The President then requested Mr. W. T. Blanford, to favour the Meeting with his

Notes on a Journey in Northern Abyssinia.

At previous meetings of the Society, letters from me have been read, giving a brief general account of my movements in Abyssinia—

return of the army to Zoulla to June. Subsequently to the departure of the troops, I made another journey in Northern Abyssinia which I will now offer a few notes.

Accompanying the army I had had a fair opportunity of studying the fauna of the highlands of Abyssinia (7,000—8,000 feet) and of the low country near the Red Sea. But I had observed that very interesting intermediate fauna occurs at about 3,000 to 4,000 feet of elevation, and many forms, rare on the highlands, are abundantly represented. I therefore was glad to avail myself of the opportunity for examining a tract of country of this intermediate elevation.

On my return to Zoulla in June, I learned that Mr. Munzinger, the Consul at Massowa, intended to visit the Anseba valley and Bogos country, and an officer of the army whom I knew had to accompany him. Mr. Jesse, the Zoologist, and I joined them, which thus amounted to four.

The great mass of the Abyssinian highlands, of an average elevation of 7,000 to 8,000 feet, terminates a little north of the parallel 10° N., and opposite to Massowa, in the plateau of Hamazen. On the northern side of this plateau two considerable streams arise, the Anseba and the Barka, which, after a course of some length, both fall into the Red Sea south of Suakin. Both are dry during the rains; during the wet season, however, they are frequently full. The country drained by them is of a general level of about 5,000 feet, with many hills rising 6,000 and 7,000, and several plateaus, such as that of Marea, of the same height as the highlands to the south (7,000—8,000 feet). These countries are inhabited by tribes of Bedawin, formerly all Christian, but of late years largely converted to Mahomedanism. Amongst the tribes which are still independent, some of the most important inhabit the upper Anseba valley, and of these the Bogos is one of the largest and wealthiest.

Mr. Munzinger left Zoulla on the 18th June, in a steamer for Massowa: a distance of about 100 hours by steam. At Massowa we were detained for several days making arrangements for our journey, obtaining transport, and on the 22nd, delighted to escape from the heat, which was almost insupportable. For our carriage we used some of the wagons left behind by the army in Mr. Munzinger's charge, and a wild looking crew of drivers from the Habab tribes, who,

however, behaved very well, and carrying with us all provisions except meat, which we expected to obtain from the inhabitants or by our guns. We were accompanied throughout by a brother of the Nab of Arkeko, one of the principal chiefs of the country.

We marched first due west about 30 miles to Ailat at the foot of the main range of hills, intending to wait there for Mr. Munzinger, who was detained in Massowa. The road lay through low hills, mostly of a peculiar formation composed of interstratifications of volcanic and sedimentary rocks. About 20 miles from Massowa, we entered metamorphics, the newer volcanic beds being confined to the neighbourhood of the coast, along which they appear to form a fringe.

Ailat is the place where Mr. Rassam and his party remained for a long time, whilst awaiting an answer from Theodore to their application for permission to enter Abyssinia. The village is in a plain which here extends for many miles along the foot of the hills. As this was about three miles from water, we pitched our camp close to the latter, a proceeding we had subsequently occasion to regret. The water is supplied by a very hot spring, the temperature of which was unable to take accurately, one of my thermometers not ranging sufficiently high, while the boiling point thermometer was not graduated low enough; the temperature is, I believe, 150° or 160° , much hotter than other springs which issue along the foot of the hills, though all have a high temperature.

At Ailat lions and leopards abounded. Of the former, one came one evening within 200 yards of our tents, but we could not succeed in shooting it. A cow tied up as a bait was entirely devoured by hyaenas (*H. crocuta*), which were as numerous here as everywhere else in Abyssinia. The spotted hyaena, though smaller in size, is far bolder than his striped relative (*H. striata*). I have never heard of even a young bullock or cow being killed by the latter in India, although I have known hundreds of instances of young buffaloes or bullocks being tied up as baits for tigers and panthers.

I obtained several birds at Ailat which I had not previously met with, the most interesting being *Micronisus niger*, *M. gabar*, *Crotopus superciliosus*, *Lamprotornis rufiventris*, *Quelea sanguinotris*, *Halcyon rufiventer*, *Promerops senegalensis*, *Dryoscopus cubile*,

so obtained a fine wild pig (*Phacochoerus Æliani*), of which there has been preserved. Bustards (*Otis Arabs*) Beni Israel (*Antiphthalmophus Hemprichii*) and guinea fowl (*Numida ptilopus*) abounded.

We remained at Ailat until the 30th June, when we were induced in consequence of a very sad accident, an Abyssinian servant Jesse's being killed in the night by a leopard in our camp. It was done so quietly that our first intimation was an outcry from the man nearest to the one killed, who was awakened by the animal passing the body past him. The unfortunate Abyssinian was quite mangled with two or three tooth marks in his throat. The wild animals are probably the reason why, in this country, all villages and all encampments are placed at a considerable distance from water, and we accordingly afterwards had fires kept burning all night, a most important precaution.

This circumstance of course alarmed all our men, and, as all our attempts to kill the beast proved fruitless, we determined to move at once. We accordingly went northwards along the base of the hills to Asus, and thence to Kusaret, a little way within the ranges, intending to go on to Infia, a place said to be 2,000 feet or rather more above the sea, and to have a pleasant climate.

At Asus we heard from Mr. Munzinger that he would still be there for some time in Massowa, and that we had better go on by the route to Keren in Bogos via Ain and the Lebka valley, as the route via Kusaret is impracticable for camels. As we were all very much less tired of the heat, and Mr. Jesse was for two or three days recovering from exposure to the sun, we determined on pushing at once into the higher country. We accordingly marched to Kanzal 20 miles, and thence made a long march of 30 miles at night across the desert to Ain where the Lebka stream emerges from the hills: the distance occurring between the two places, the march could not be made in the day.

We had not long left Kanzal, when we came to an encampment of the Warea tribe, pitched as usual about 3 miles from water. The campment was surrounded by a circular low thorn fence, inside of which were small hemispherical huts of mats with a framework of branches. These were arranged in a circle just inside the fence. In the centre of the circle, where the goats and cattle were herded at night, stood

two or three isolated huts, one of which was said to be used for marriages and another for the sick. The people resembled Shohos, having bushy frizzled hair with long curls, but besides the spear, the universal weapon of Abyssinia, and indeed of almost the whole of Africa, the chiefs wore straight swords of European manufacture, and not curved scimitars like those of the Shohos and Danakila.

The head sheikh, a most truculent looking old ruffian, but very civil nevertheless, went on with us for some distance, and we commenced our night march across the desert. It was a bright moonlight night and we met with large herds of *Gazella sommeringii*. We rested for a few hours after midnight and, starting again at daybreak, reached Ain about 8 o'clock.

There we halted for a day and then marched up the Lebka valley. The road, like the path from Koomeylee to Senafé, and all the passes leading to the Ethiopian highlands, is the bed of a torrent, and the ascent in the Lebka is even more gradual than from Koomeylee. In a march of 20 miles we only ascended about 1,000 feet, and the greater portion of this ascent appeared to be at a few narrow rocky gorges. The hills at the sides of the pass are very barren, and the scenery nowhere so grand as in the magnificent gorge of Sooro between Koomeylee and Senafé. Two marches of about 20 to 25 miles each, led us up this valley, the first to Mohabar, the second past Kelamet, a small village of the Az Temeriam tribe, to Kokai. Here we almost suddenly—certainly within a distance of 5 or 6 miles—passed from a perfectly desert region into hills covered with grass and green bushes, and rich valleys with fine trees, amongst which *Adansonia* and the Kolqual, that magnificent *Euphorbiaceous* plant which forms so conspicuous an element in Abyssinian scenery, were abundant. This change took place at about 3,500 feet, Kokai being about 4,000. We had passed suddenly into the region of the Abyssinian rains.

At Kokai we found a large encampment of the Az Temeriam with an immense herd of camels. These people and all others of the Habab and Shoho tribes, live a curious nomade life. During the cold weather, from November till April or May, they inhabit the lowlands near the Red Sea, which, at that time, in consequence of the winter rain, afford pasturage for their animals. When grass and water fail in Samhar, as the tract along the sea is called, these people

with their camels, cattle, sheep, goats and mules to the highland and remain there from June till November. They are thus different parts of the year subject to different nationalities; pay tribute to the Turks for their occupancy of the lowlands, the Abyssinians for the pasturage in the highlands. They are nommedans.

had seen a few tracks of wild elephants on our road up the

They migrate like the people, descending to the lowlands when the lowlands are green with the winter's rain, and ascending to the highlands in June and July. We heard that some were in the neighbourhood of Kokai, and the morning after our arrival, the villagers brought information of a small herd near our encampment. They were in the lowland about a mile distant, and, singularly enough, in the middle of the lowlands which were feeding in all directions in the jungle. They were in a most extraordinary place for wild elephants. Not only were the camels, but the men with the camels had been in the same neighbourhood the whole morning, shouting and making it known that no Indian wild elephant in the daytime would have been within miles of. When the elephants were first pointed out, a camel was quietly browsing within 20 yards of one of them, the elephant nor camel taking any notice of each other.

There were 5 elephants; one old female and 4 males of various sizes. The largest nearly the size of the female, the others smaller, the smallest not above 3 feet high. We succeeded in killing all, the smallest being shot by some mistake. They shewed no disposition to run, and we were rather ashamed of killing such quietly disposed animals. The next herd met by one of our party were of a very different temper, and he had to run for his life from them, and Mr. G. one day when collecting little birds with only dust shot in his eye was charged without provocation by an immense female.

It is evident that the whole herd was a family, the mother and young ones of various ages, and it is probable that in this respect African elephants resemble those of Ceylon as described in Tennant's work. I secured the skull of the largest elephant.

The very small tusks, as indeed, have all the elephants of this part of Abyssinia; so that nearly tuskless races occur amongst African as well as the Asiatic elephants. We tried elephant's

trunk and foot, baking them in a hole in which a big fire had been made, after the most approved African recipe. The trunk was pronounced excellent though rather hard; as to the foot we were none of us inclined to endorse Sir Samuel Baker's high approval of it. The whole of the elephant's flesh, indeed, I may say everything from the carcass soft enough to be eaten, was carried off for food by the natives. The skin they also took to make into shields. Mr. Jesse and I remained at Kokai some days: the fauna was very rich and interesting. Amongst the birds were a parrot, *Pæocephalus Moyeri*, and 3 kinds of Rollers — *Coracias Abyssinica*, like the Indian bird in plumage, but with elongated tail feathers; *C. Levaillantii* which is more nearly allied to the European roller; and *Eurystomus aser* which I had not previously met with. I also obtained here a species of *Oxylophus*, (probably *O. aser*), *Chizaerhis zonura* and many other species.

On the 18th July, we marched from Kokai to Bedjuk in the Anseba valley. The road lay over a low pass, Mas'halit, about 4,800 feet above the sea, separating the feeders of the Lebka from the Anseba valley. Bedjuk, the principal village of the tribe of that name, was by far the largest place we had seen since leaving Massowa. Here also we came upon the first cultivation we had met with. The Habab tribes cultivate small tracts of land in Samhar and other parts of the lowlands after the winter rains, but they possess no land in the highlands. The cultivation around Bedjuk consisted entirely of jawari or millet (*Holcus*), apparently the only grain grown at this season in this part of the country.

The Anseba valley near Bedjuk is an undulating tract 8 or 10 miles broad, but becoming narrow above and below. Except a considerable area of cultivated ground near Bedjuk and smaller tracts near some other villages, all is covered with thin bush jungle, except in the ravines, which contain thick scrub. On the bank of the river there is a belt of high trees with dense underwood, so thick in many places that it is difficult to creep through it except by following the narrow paths made by elephants and rhinoceroses. There was a considerable quantity of water in the river, and frequently it was so much flooded as to be impassable.

With the exception of one visit to Keren, the principal village of

tribe, I remained on the Anseba from the 13th July till August, collecting ; and I obtained a very fine series of species. The principal Mammals inhabiting the valley were 2 monkeys, *Hamadryas* and *Cercopithecus griseoviridis*, lions, jackals (*Canis mesomelas* a very handsome species) rhinoceroses (two), elephants, *Phacochoerus*, *Hyrax* (much less common in Abyssinia proper), *Xerus leuco-umbrinus*, *Sciurus annulatus*, and *Habessinicus*) Koodoo, Klipspringer and Beni Israel. The Koodos were numerous and very noisy, constantly roaring round our tents but we only once saw one and never succeeded in getting a young one. The rhinoceroses kept to the neighbourhood of the river, their principal abode being in the dense thickets on the bank, and the presence rendered walking through these thickets rather disagreeable. During our stay we killed two ; the skeleton of one has been sent by Mr. Jesse to England, where it will doubtless be valuable, as no skull even of the species exists in London. Of the rhinoceros I have preserved the head (exhibited). This species, which I obtained at the Cape of Good Hope by *R. bicornis* appears to be a very black rhinoceros of Northern Africa. It is undoubtedly a species so frequently mentioned by Sir Samuel Baker. The antelopes (*Strepsiceros*) were in small herds in the open jungle away from the bank, bucks being very much rarer than does. Klipspringers (*Lepus saltatrix*) occurred on the hills, but they never came down the valley.

Among the birds, the superb *Helotarsus ecaudatus*, one of the finest of the species was as far from scarce. Besides *Pæocephalus Meyeri*, another species of rather parroquet occurred, *Palæornis cubicularis*, which I could not be just distinguishable from the common Indian *P. torquatus*. Of woodpeckers, I obtained *Picus æthiopicus*, and of barbets *Caprimulgus Saltii* (*Laimodon Brucei*, Rüpp.) *Barbatula chrysola* and *Trachyphonus margaritatus* which has a call singularly resembling that of the grey partridge of India. *Centropus superciliosus*, a species of *Chrysococcyx*, *Oxylophus afer* and a second species of *Oxylophus* which I cannot distinguish from the common Indian *O. melanopterus* and, in August, *Cuculus canorus* were the Cuckoos met with. No species of *Indicator* occurred in the river thickets. *Colinus pectoratus* and *C. leucotis*, *Turacus leucotis*, and *Chizaerhis zonura*

were far from rare, the last two on the river banks only. Of the Fringillid Insectivores besides the 3 Rollers, the principal forms were 3 species of Kingfisher, all insectivorous, and all distinct from the 3 species which I obtained on the highlands, and 4 hornbills, of which *Tockus larvatus* was scarce. It and *Tmeteceros Abyssinicus* belong to the highland fauna while *Tockus erythrorhynchus* and *T. nasutus* are common to the Anseba valley and to the base of the hills. *T. flavirostris*, so common in the passes below Senafé, did not occur. 2 species of *Promerops*, *P. erythrorhynchus* and *P. cyanomelas*, *Nectarinia pulchella*, *N. affinis* and, very rarely, *N. cruentata*, *Dicrurus lugubris*, *Oratoropus leucocephalus* and *C. leucopygius* (another instance of both highland and lowland forms occurring together) *Dryoscopus cubla*, *Telephorus aethiopicus*, *Oligura micrura*, *Parus leucomelas*, *Hyphantornis larvatus*, *H. personata*, *Estrela phœnicotis*, *Lagonoticta minima* and *Zonogastris citreior* were a few of the more conspicuous Insectivores. *Treron Abyssinica*, *Columba guinea* and one or two doves were common, *Francolinus Ruppelli*, *F. gutturalis*, *F. Ercklii* (rare here, common at higher levels) and *Numida ptilorhynchos* were the principal Rasores. Waders were scarce, *Ciconia Abdimii*, *Scopus umbretta*, *Lobivanellus senegalensis* being the most conspicuous, and I obtained a specimen of *Edicnemus affinis*. Of water birds I only found *Chenalopez Egyptiacus*, the Egyptian goose or sheldrake, which was breeding on trees along the river.

Of Reptiles I obtained *Emys (Pelomedusa) Gehaffiæ* and *Testudo (Cinixys) Bellianus*, *Varanus ocellatus* and two species of snakes.

Butterflies and beetles abounded, and I procured a small collection. Mollusca were singularly scarce.

The inhabitants of the valley consist partly of Christian tribes, Bedjuk, Belen, &c., partly of the Habab Mahommadans, both being perfectly friendly. There is none of the bigotry of the Abyssinian highlands: both Christianity and Mahommedanism are of a low type, and approximate so closely, that conversions from one to the other are constantly taking place. The people composing the tribes are of two classes, chiefs and commoners, of different origin, the former being later immigrants into the country. The latter own all the land, the wealth of the former consisting mainly of cattle. The men, from the age of about 18, let their hair grow into a frizzled mass or into ringlets,

plaited as amongst the Abyssinians of Tigré and Amhara, it is just as liberally plastered with butter or fat. Their arms are straight swords, spears and shields.

Their houses are the same hemispherical mat huts as those mentioned before. Far more conspicuous, however, are their tombs, which are different from any others in Abyssinia, and consist of round stones, 20 feet or more in diameter, placed generally on the rise, and covered at the top by fragments of quartz. These *mulis* are the most conspicuous objects in the Anseba valley. They are not covered over with white stones; these we learned were the graves of men who had been killed, but whose deaths had not been avenged, the law of blood for blood being strictly carried out. The custom is of this nature. If a man has been killed by another, now, whether the man killed was amusing himself by carrying off the other's cattle, whether he was killed accidentally or intentionally, is all the same; the murderer may offer to atone for the crime by paying the relatives of the dead man a certain fixed number of cows; the exact number depending upon whether the man was a chief or a commoner. I forget the exact number, but it is usually fixed. If this be accepted, it is well, but if not, or if, more frequently the case, no atonement is offered, the relatives of the murdered man up to the 7th degree, are bound to kill the murderer or one of his relatives also to the 7th degree, women and children, however, being excepted. These blood-feuds are general between families in different tribes, occasionally, however, between families in the same tribe, but they frequently lead to petty wars, and the tribes have suffered greatly in consequence, for the feud usually continues until one family or tribe has lost so many of its members, that there is no hope of avenging the deaths of all, then a truce is made and sealed by intermarriage. Many other customs of these people are very curious, such as that of submitting disputes to arbitration. There can be no question of their being a totally different stock from the Abyssinians of the highlands, their features are quite of another cast, and their houses are as distinct in their manners and customs. They have been described by Mr. G. F. Meyer in two works "*Sitten und Rechte der Bogos*" and "*Nord-äthiopische Skizzen*;" but the works seem to be but little known,

even in Europe. There are probably few tribes, however, who present more remarkable peculiarities.

Mr. Munzinger joined our party after we had been three or four days at Bedjuk, and remained with us for some days, finally returning with us to Massowa. From his great knowledge of the people, and the respect in which he is held by them, he has considerable influence, and during our stay he succeeded in postponing if not preventing an attack upon some of the Bogos people by the chief of Hamazen. With Mr. Munzinger I spent a day at Keren, the largest village in this part of the country, and in which some French Missionaries are resident. There were other Europeans also in the neighbourhood, amongst them the Count de Seve, one of the French Commissioners, who had accompanied the army in Abyssinia, and who was staying with an Italian, who has lived for some years near the Barka. Except the houses of the Mission and one or two others, all the huts at Keren are the usual mat domes, sometimes covered over with a grass roof. Keren lies about 16 miles S. W. of Bedjuk in an open plain at the base of a mass of hills composed of highly granitoid gneiss.

During our stay in the Anseba valley, we did not remain at Bedjuk, but marched down the valley as far as Maregas, halting at intermediate places. The weather was very pleasant, always fine in the morning, though it generally rained for an hour or two, sometimes longer, in the afternoon.

About the time we left, the rain was increasing, and we were unable to return down the Lebka. We had to make a detour to the north from Kelamet through Rairo, near Af Abed, where we found very large encampments of the Habab tribes, who had brought their flocks and herds from the north, where no rain had fallen, and pasturage was consequently deficient. Lions were numerous, having as usual followed the cattle. At our next camp on the Lebka, near Ain, 4 of them came within a quarter of a mile of our camp and one of them seized a camel. We succeeded in shooting this one which was a lioness, and the others ran off. The lions had only very short manes, as appears to be universally the case in Abyssinia.

At Rairo the whole country consists of highly granitoid gneiss weathering into the peculiar rounded masses so characteristic of the rock in India, as in parts of the Sonthal pergunnahs, in Mysore and

other parts of Southern India, &c. I found many small flakes of obsidian scattered about, evidently chips struck off in the formation of stone implements. I had before found the same in many places in Abyssinia, near Zoulla and close to Magdala amongst others, but they were more remarkable here, as no volcanic rock from which they could have been derived exists in the neighbourhood.

We marched from Rairo into the Lebka, returned along the stream to Ain, and thence crossed the desert by the direct route to Massowa. I halted for 3 days at Amba, 30 miles N. W. of Massowa, in order to endeavour to obtain specimens of the *Oryx Beisa*. In this I was successful. The *Oryx* occur singly or in small herds and keep near the places where water is found, as they drink every day. They are very beautiful antelopes, as large as a wild ass and with very much the same colour, form and movement. I killed 4 altogether and have preserved 2 skins and a skeleton. Ostriches also occur in this part of the country but we saw none.

At Amba, the halting-place where I killed the *Oryx*, we met a party of Egyptian officers engaged in surveying a line for an electric telegraph from Massowa to Suakin. We finally returned to Massowa on the 23rd August. Mr. Jesse left by the Egyptian steamer for Suez. My remaining companion and myself, after being kept till the 29th, succeeded in chartering a small open boat to carry us to Aden. Luckily we had a fair wind as far as Perim and we reached Aden on the 3rd September.

* * * * *

After a few remarks made by the President on the great interest which attaches to this paper, the meeting broke up.

LIBRARY.

The following additions have been made to the Library since the last meeting.

. The names of the Donors in capitals.

Presentations.

Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin, 1866.—BY THE ACADEMY.

Philosophical Transactions of the Royal Society of London, Vol. 157, Part II. —BY THE ROYAL SOCIETY OF LONDON.

Bulletin de la Société de Géographie, Août, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Transaction and Proceedings of the Royal Society of Victoria, Vol. IX. Part I.—BY THE ROYAL SOCIETY OF VICTORIA.

Journal of the Statistical Society of London, Vol. XXXI. Parts II—III.—BY THE STATISTICAL SOCIETY OF LONDON.

Journal of the Chemical Society of London, Vol. VI. July, August, September.—BY THE CHEMICAL SOCIETY.

Journal Asiatique, Tome XI. No. 43.—BY THE ASIATIC SOCIETY OF PARIS.

Zeitschrift der Deutschen Morgenländischen Gesellschaft, Band XXII. Heft I. II. III. DIE DEUTSCHE MORGENLÄNDISCHE GESELLSCHAFT.

Catalogue of Scientific papers compiled and published by the Royal Society of London, Vol. I.—BY THE ROYAL SOCIETY OF LONDON.

The Fellows of the Royal Society, 30th November, 1867.—DITTO DITTO.

Indische Studien, Vol. X. Part III.—DR. A. WEBER.

The History of India. By Sir H. Elliott, Vol. I. Three copies.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

General Report of the North Western Provinces Exhibition held at Agra, February, 1867.—THE GOVERNMENT OF BENGAL.

Adam's report on Vernacular Education in Bengal and Behar. By the Rev. J. Long.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

Report of the Inspector-General of Dispensaries in the Panjab, 1867.—THE GOVERNMENT OF BENGAL.

Ditto on the Sanitary Administration of the Panjab, 1867.—THE GOVERNMENT OF BENGAL.

Records of the Geological Survey of India, Vol. I. Part III.—THE GOVERNMENT OF BENGAL.

Report on the Administration of the North Western Provinces 1867-68.—THE GOVERNMENT, NORTH WESTERN PROVINCES.

Selections from the records of Government North West Province Vol. I. No. II.—THE GOVERNMENT NORTH WESTERN PROVINCES.

Selections from Calcutta Gazettee of the years 1798 to 1805. By W. S. Seton-Karr, Esq.—THE GOVERNMENT OF BENGAL.

Purchase.

Revue Des Deux Mondes, 15th September, 1st October, 1868.

Comptes Rendus, Nos. 9, 10, 11, 1868.

Revue Archéologique, No. IX. 1868.

The Quarterly Journal of Science, No. XX. October, 1868.

Westminster Review, No. LXVII. October, 1868.

Revue de Zoologie, No. 9, 1868.

The American Journal of Science and Arts, No. 136, 1868.

The Annals and Magazine of Natural History, No. X. 1868.

Persian MSS. Purchased.

Sirájullughát, by Sirájuddín 'Alí Khán Arzú.

'Atiyyah i Kubra, by Do.

Sharh i Zuhúrí.

Dalíl i Sáti.'

Exchange.

The Athenæum, for August and September, 1868.





INDEX.



	<i>Page</i>
, Maulví, on the Panthays,	142
letters from,	84, 167
Northern, notes on a Journey in,	276
Abyssinia,	83
f the Society for 1864, ... ..	... after p. 206
to the Library, <i>vide</i> Library.	
the President,	11
r from,	65
rí,	126, 141, 266
peror,	222, 263
Khán Khánzamán,	222
in the Bye-laws of the Society, 42, 62, 81, 132, 137,	
	138, 140, 160, 254
s Theos, coin of,	164
Grammars, notes on,	219
ssia, Area of,	86
f the accounts of the Society,	10
. H. Godwin, Notes to accompany a Geological	
he Khasi Hills,	74
on Armenian Grammars,	219
n, Prince, Persian poems of,	220
oin of, -	164
demoiselle,... ...	82
ian,	222
remarks on elephants,	129
on stone implements,	177
on the Kheriahs,	177
on the Flora of Mánbhúm,	254

	<i>Page</i>
Bapu Deva Sastri, Prof., elected Hony. Member,	62
Beames, J., on Chand's poems,	242
Bibliotheca Indica, progress of,	8, 39
Birds of Abyssinia,	85
—— of Goona District,	118, 177
Blanford, H. F., on discrepancies in the observations of the Cyclone of 1867,	66
——, on Celts,	59
——, on Lt. Sale's letter,	90
——, resigns Secretaryship,	125
Blanford, W. T., Contributions to Indian Malacology,	50
——, Letter from Aden,	65
——, Letter from Zulla, Abyssinia,	83
——, Letter from Senaffè, ditto,	167
——, on Onchidium,	256
——, notes on a Journey in Northern Abyssinia,	276
Blochmann, H., Contributions to Persian Lexicography,	127
——, appointed Secretary,	208
——, on Persian poets, styled Sultan,	220
——, notes on a MS. of the Sirájallughát,	262
——, remarks on the Sundarban,	266
Bopp, F., Obituary Notice of,	3, 22
Bowring, J., on Cromlechs,	243
Buddist Monastery,	219
Burmah, History of,	204
Bye-laws, <i>vide</i> Alterations.	
Calcutta, antiquity of the name of,	267
Carnegy, P., Queries regarding the races of India,	86
Caste, What is Caste?	86
Celts, notes on,	59
Chand's poems,	63, 165, 245
——, MS. of Chand's poems,	63, 165, 242
——, contents of,	166
Coin Cabinet of the Society,	8
Coins, note on,	164
Cole, Capt. R. A., on Cromlechs,	151, 243

	<i>Page</i>
committees, appointment of,	60, 253
implements,	251, 262
responding Members, <i>vide</i> Members.	
coins and Crosses in Southern India,	116, 147, 151, 184, 248
Edgham, General A., elected Hony. Member,	62
—, R. H., note on gold and silver pieces found under the of a Burmese convict,	115
coins, in past centuries,	265, 268
Sanskrit names of the,	238
coins, Models of,	209
Edipus Verreauxi, <i>Tytler</i> ,	200
coins, reports on,	256
showers of,	182
—, Notes on,	127, 209, 215, 242, 273, 275
number of office-bearers,	10, 141, 208
coins, notes on,	118, 127, 129, 131
Edstone's History of India,	222
Botanical Congress,	28
— Reports,	29
—, Sir G., obituary notice of,	2, 25
— Dr., President's Address,	11
—, La, dans l'Inde Antique,	81
— of Shíráz,	221
— shwar, temple of,	50
—, action of, near Benares,	229
— oda, new species of,	201
— s Gaurus,,	194
— of Mashhad,	223
— icola Bengalensis,	201
— A., elected Hony. Member,	162
—, F. S., on the village of Paindhat, Mainpúrí,	62
— on Chand's poems,	245
— kushtí,	221
—, Sir J. B., Obituary Notice of,	26
— ropinqua,	263
—	222

	<i>Page</i>
Herschel, W., on a Hindu Temple,	50
Honorary Members,	62, 162
Húglí, antiquity of the name of,	267
Huvishka,	220
Hydrocissa migratoria,	196
Implements of copper found at Mainpúrí,	251, 262
Inscriptions from Mathura,	219
Iron cage found at Farídpur,	79
Jaw jungle,	200
Jáya Chand, king of Kananuj,	63
Johnstone, Lieut. J., note on elephants,	118, 127
Jones, Sir W., tomb of,	27
Kantipur, village of,	63
Kháfí Khán,	114
Khán Zamán,	220, 224
Khásí Hills,	74
Kheriahs, a race of Mánbhúm,	177, 191
King, Dr. G., Note on birds of the Goona District,	118, 177
—————, on the Lion of Aboo,	178, 198
Kurz, S., on Pandanophyllum,	241
—————, on the genus Pandanus,	257
Latitude, as determined by Captains of Native Coasting Vessels,	201
Lees, Major W. N., on the Maásir i 'Álamgírí and Kháfí Khán,	114
Lepcha Grammar,	3
Library, additions to, 7, 51, 75, 101, 133, 156, 178, 204, 225,	246, 258, 287
Limnaetus, several species of,	195
Lions in India,	198
List of Members,	after p. 58
Long, Rev. J., on a MS. of Chand's poems,	63
—————, on the Sundarban,	265
Maásir i 'Álamgírí,	114
Macdonald, Major J., on the eclipse,	215
Mahabhárat, English and Persian translations of,	43
Malacology of Lower Bengal, &c.,	50, 255
Maingay, Dr. A. C., on rare Malayan animals,	127, 177, 194

	<i>Page</i>
m, Flora of,	254
ripts, Sanscrit,	43, 51
, Inscriptions from,	219
olo,	132
elli, Rev. F. F., on an iron cage,	79
tt, H. B., on the action of the Ganges,	232
s, Annual,	1
—, Ordinary Monthly, 41, 59, 79, 105, 125, 138, 159, 181, 207, 227, 251, 262	
s, Special General,	123, 137, 249
us,	200
s, list of, after p.	58
—, Ordinary, elected, 42, 62, 80, 105, 126, 139, 160, 183, 207, 227, 252, 262	
—, Honorary, elected,	62, 162
—, Corresponding, elected,	62
—, resigned, .. 42, 81, 106, 126, 139, 160, 183, 228, 262	
—, died,	1, 2, 22, 27
—, struck off,	2, 81
unipora Bengalensis,	174
tes, notes on,	12, 203, 208
ology, corespondence on,	66
ological observations during the Eclipse,	242
ncursions of,	266, 268
mad Sáqí Musta'id Khán,	114
madans in China,	142
an, on Cromlechs and crosses in India,	115, 147
habullubáb,	114
2,	3
—, formal transfer of,	249
pollux,	263
Messrs. G. and H., on new Gastropoda,	201
, collection of Meteorites,	208
, New Marine Mollusca from Ceylon,	262
Sanscrit names of,	238
y notice of Members of the Society,	2, 22, 26, 27

	F
Officers of the Society, election of,	10, 141,
Oldham, T., President, on his election as President, ..	
———, remarks on elephants, .. ..	.. ..
———, on a shower of earth, .. ..	.. ..
———, on Cromlechs,	187, 243,
———, on an instrument used by Native Captains for determining their latitude, .. ..	.. ..
———, on Meteorites,	203,
———, on Models of Diamonds, .. ..	.. ..
———, on the eclipse,	218,
———, on the action of the Ganges,	
———, on the transfer of the Museum,	
———, on copper implements,	
Oldham, W., on a shower of earth,	
———, Memorandum on the action of the Ganges, ..	225,
Onchidium, notes on,	
Oerki, a Scythian king,	
Paindhat, village of,	
Pali Grammar,	
Pandanophyllum, notes on,	
Pandanus, notes on,	
Panduvansi,	
Pánipat, battle of,	
Panthays, notes on,	
Pelicanus Philippensis,	
Persian Lexicography,	127
Phayre, Col. Sir A. History of Burmah,	
Phear, Hon'ble J., on Cromlechs,	
Pilibhit,	
Port Blair,	
Portuguese, incursions of the,	265
Pratap Chunder Ghoshe, on the Sundarban,	
Pratápáditya, Rájah of Jessore,	264
Presentations received, <i>vide</i> the Appendices.	
President's Address,	
Prithivi Ráj, <i>vide</i> Chand.	

	<i>Page</i>
Sir Radhakanta Deva, obituary notice of,	3, 23
ra Lala Mitra, on the English translation of the Mahá-	
at,	43
—————, on Sanscrit MSS.,	43
—————, on a facsimile and wax impression, ..	163
—————, on coins of Antimachos and Azelisas, ..	164
—————, on inscriptions of Mathura,	219
—————, on a letter from Prof. Dr. Kuhn, ..	235
, H. J., on the Sundarban,	264
, Annual,	1
, Museum,	3
, Finance,	3
, Officers,	6
, Journal,	7
, Library,	7
, Coin Cabinet,	8
, Bibliotheca Indica,	8
of the Society, <i>vide</i> Alterations,	
Committee of,	253
, Asiatic, Area of,	86
at., on spheres of Sandstones found in Cachar, ..	90
at MSS., purchased,	43, 51
lughát,	262
us cristatellus,	195
ka, Dr. F., on elephants,	131
—————, on Sagartia Schilleriana and Membranipora	
galensis,	174, 263
—————, appointed Natural History Secretary, ..	163
—————, on Pandanophyllum,	241
—————, on Malacology of Bengal,	255
—————, on Nanina pollux and Helix propinqua, ..	263
—————, on the eclipse,	275
rban, notes on,	264
, title of Persian poets,	220
ix,	200
r, Capt., Remarks on the Eclipse,	209

Tennant, Major F., Notes on the Eclipse,	..	..	..
———, Results deducible from ditto,	..	..	..
Tirtha,	..	..	..
Tomb of Sir W. Jones,	..	..	..
Tompson, Dr. T., elected Honorary Member,	..	..	..
Transfer of the Museum,	..	..	..
Trichaurus ericoides,	..	..	..
Tytler, Lieut.-Col. R. C., on Drymoipus,	..	..	..
Untiábág'h,	..	..	..
Walker, Lieut.-Col. J. T., on Port Blair,	..	..	..
Wheeler's History of India,	..	..	..
Wild Hunter,	..	..	..
Yunnan, province of,	..	..	..
Zoological notes on Abyssinia,	..	..65, 85, 167, 170,	

ADDITIONAL ERRATA.

Page 74, l. 6 from below, read *Geological*, for *Zoological*.

APPENDICES.

APPENDIX A.

List of Communications received in 1868.

Authors.	Papers Communicated.	Author's date.	When received.	Where printed.
Abdul Latif Khan Bahadur, Maulavi, ..	Notes on an Arabic history of the Panthays,	3rd June 1868.	3rd June 1868.	Proc. June 1868.
Godwin-Austen, Capt. H. H. W.	Notes to accompany a Geological Map of a portion of the Khasi Hills, near Long. 91° E., ..	October 1867.	28th Jan. 1868.	Will appear in Journ. Pt. II. No. I. 1868.
Avdall, J. Esq.	Authors of Armenian Grammars, from the earliest stages of Armenian literature up to the present day, Notes on the Kheriahs, an aboriginal race living in the hill tract of Mánbhúm,	30th July 1868.	30th July 1868.	Jour. P. I. No. II. 1868.
Ball, V. Esq.	Notes on the Flora of Mánbhúm, Contributions to Indian Malacology, No. IX., .. .. .	.... ....	1st July 1868. 4th Nov. 1868.	Proc. August 1868. Proc. Nov. 1868.
Ditto ditto, ... Blanford, W. T. Esq. ..	Notes, on a tour Northern Abyssinia, Contributions to Persian Lexicography,	2nd Dec 1868.	12th Jan. 1868. 2nd Dec. 1868.	Jour. P. II. No. II. 1868. Proc. December, 1868.
Ditto ditto, Blochmann, H. Esq., M. A. Ditto ditto, ...	Notes on the Poems of Prince A'zamuddin, grandson of Tipu Sultan, and on three other Persian Poets, styled Sultan, .. ..	....	11th April 1868.	Jour. P. I. No. I. 1868.
		1st Sept. 1868.	1st Sept. 1868.	Proc. Sept. 1868.

Appendix.

Appendix.

Herschel, W. Esq.	Descriptions of a Hindu Temple converted into a mosque at Gangeswar, Zillah Midnapore, ..	7th Dec. 1866.	21st Dec. 1867.	Jour. Pl. No. I. 1868.
Johnstone, Lieut. J.	A memorandum on Elephants, ..	12th Mar. 1868.	16th Mar. 1868.	Proc. May 1868. [1868.
King, Dr. G.	On the birds of Goona Districts, ..	2nd Mar. 1868.	10th Mar. 1868.	Jour. P. II. No. IV.
Ditto ditto,	Notes on the Lion of Aboo, ..	30th May 1868.	9th June 1868.	Proc. August 1868.
Kurz, S. Esq.	On Pandanophyllum and allied genera, .. .. .	....	19th Oct. 1868.	....
Ditto ditto,	Remarks on the genus Pandanus,	....	Nov. 1868.	....
Maingay, Dr. A. C. ..	Notes on rare and little known birds, .. .. .	....	8th April 1868.	Proc. August 1868.
Mitchell, R. Esq.	Vranikof M. M., statistical data on the area of Asiatic Russia, Trans-lation of,	2nd Mar. 1868.	10th Mar. 1868.	....
Nevill, Messrs. G. & H.	On some species of Gastropoda from the Southern Provinces of Ceylon, .. .. .	....	5th Augt. 1868	....
Oldham, W. Esq. L.L.D.	Memorandum on the action of the Ganges in the Benares Province,	....	6th Oct. 1868.	Proc. October 1868.
Phayre, Col. Sir A.	The History of Burma,	18th June 1868.	25th July 1868.	Jour. P.I.No. II. 1868.
Rajendralala Mitra, Babu	Notes on the inscriptions from Mathura, .. .. .	....	....	....
Rainey, H. J. Esq.	What was the Sundarban origin-ally, and when and wherefore did it assume its existing state of utter desolation?	23rd Nov. 1868.	23rd Nov. 1868.	Proc. December 1868.

Authors.	Papers Communicated,	Author's date.	When received.	Pl. & No. of the Journl. and Proc.
Stoliczka, Dr. F.	On the Anatomy of Sagartia Schilleriana and Membranipora Bengalensis, .. .. .	....	3rd June 1868.	Will appear in Journ. Pt. II. No. I. 1868.
Ditto ditto,	The Malacology of Lower Bengal, No. 1, on the genus Onchidium, ..	....	....	....
Tennant, Major F.	On Solar Eclipses and the total Eclipse, Augst. 18, 1868, ..	1st May 1868.	4th Nov. 1868.	Printed separately.
Ditto ditto,	On the results deducible from the observations made by order of the Secretary of State for India at Gunttoor, on the late total Eclipse of the Sun, .. .. .	....	25th Nov. 1868.	Proceedings for December 1868.

APPENDIX B.

List of Donations.

Donors.	Donations transferred to the Indian Museum.
Esq.	A specimen of <i>Ciconia alba</i> .
arana, Raya, Babu, ..	A specimen of <i>Strix Indica</i> .
B. W. Magistrate of ..	A copper spearhead, two copper axes, a few copper bangles.
puri,	A specimen of a <i>Teliponus</i> from the Naga Hills.
, Lieut. J.	
andra Chaturdhurina, ..	A stone slab bearing an Arabic inscription, found in his Zemindary Sherepore.
,	
andra Deva, Babu, ..	A nest of <i>Orthotomus longicaudus</i> .
Dr. G.	A skeleton of a lion.
y, Dr. A. C.	A collection of skins of rare and little known birds from Malacca.
s, H. A. Esq.	A fragment of a stone hatchet.
v. F. F. Mazuchelli, ..	An iron cage.
dasa Haladara, Babu, ..	A quantity of Kaolin from Mán-bhúm.
ge, W. Esq.,	Two specimens of <i>Llama glama</i> .
barrackpore, Park, The ..	A specimen of a young tiger.
„	A ditto of <i>Mellivora Ratel</i> (Badger).
„	A ditto of <i>Pavo muticus</i> .
Govt. Mathematical In- ..	
ment Department, The ..	Two base-line chains, 100 feet each, a Zenith Sector, with stands, a ditto Micrometer, with ditto, formerly used by Col. Lambton in the G. T. Survey.
Dr. D. B.	Twelve <i>Udia</i> skulls.
Capt. H. C. E.	Four specimens of <i>Physa Prinsep</i> , from Sanka Sahada, in the Mundla district.

LIST OF MEMBERS
OF THE
ASIATIC SOCIETY OF BENGAL,
ON THE 31st DECEMBER, 1867.

LIST OF ORDINARY MEMBERS.

The * distinguishes Non-Subscribing and the † Non-Resident Members.

Date of Election.			
1847	June	2.	*Abbott, Major-Genl. J., Royal Artillery. Europe
1860	Dec.	5.	Abdool Lutoef, KhanBahadur, Maulavi. Calcutta
1865	June	7.	Agabeg, J. Esq. Calcutta
1860	July	4.	†Ahmad Khan, Saiâd, Bahadur. Allyghur
1862	April	2.	†Aitchison, C. U. Esq. C. S. Lahore
1862	April	4.	*Aitchison, J. E. T. Esq. M. D. Europe
1859	Feb.	2.	*Alabaster, C. Esq. China
1866	Jan.	17.	†Allen, Major A. S. Lucknow
1852	July	7.	*Allen, C. Esq., B. C. S. Europe
1864	May	4.	†Alexander, N. S. Esq., C. S. Purneah
1867	Aug	7.	†Amery, C. F. Esq. Lahore
1860	Oct.	3.	Amir Ali Khan, Múnshi. Calcutta
1861	May	1.	Anderson, Dr. T., F. L. S. Calcutta
1865	Jan.	11.	†Anderson, Dr. J., F. L. S. Birmanah
1843	Sept.	4.	†Anderson, Lieut.-Col. W., Bengal Artillery. Lahore
1866	July	4.	†Anderson, A. Esq. Fyzabad
1864	Dec.	7.	*Anderson, W. Esq. Europe
1860	Nov.	7.	†Anley, W. A. D., Esq. Sarun
1867	Jan.	16.	Anley, G. A. D. Esq. Calcutta
1861	Sept.	4.	Asghur Ali Khan Bahadur, Nawab. Calcutta
1861	July	3.	*Asphar, J. J. T. H. Esq. Europe
1864	Dec.	7.	†Atkinson, E. F. T. Esq. Jaunpore
1855	July	4.	Atkinson, W. S. Esq., M. A., F. L. S. Calcutta
1861	Feb.	6.	†Austen, Capt. H. H. G., H. M.'s 24th Foot, Surv. Genl.'s Dept. Chirapunji
1826	Sept.	6.	Avdall, J. Esq. Calcutta

ction.		
t. 7.	*Baker, Col. W. E., Bengal Engineers.	Europe
v. 1.	Ball, V. Esq. Geol. Survey.	Calcutta
v. 7.	Banerjea, The Rev. K. M.	Calcutta
y 4.	Barry, Dr. J. B.	Calcutta
i. 17.	Barton, The Rev. J.	Calcutta
g. 6.	†Basevi, Capt. J. P., Royal Engineers.	Chiculda Elichpore
y 4.	*Batten, G. H. M. Esq., B. C. S.	Europe
i. 3.	*Batten, J. H. Esq., B. C. S.	Europe
y 4.	Bayley, E. C. Esq., B. C. S.	Calcutta
. 6.	*Bayley, S. C. Esq., B. C. S.	Calcutta
ne 6.	*Beadon, The Hon'ble Sir Cecil, B. C. S.	Europe
st. 7.	†Beames, J. Esq., B. C. S.	Balasore
ril 7.	Beaufort, F. L. Esq., B. C. S.	Calcutta
st. 4.	*Beavan, Lieut. R. C., late 62nd B. N. I.	Abyssinia
g. 4.	Beckwith, J. Esq.,	Alipore
y 3.	†Belletty, N. A. Esq., Civil Assistant Surg.	Shillong Khasia Hills
st. 1.	*Benson, Lieut.-Col. R.	Europe
c. 3.	†Bernard, C. E. Esq., B. C. S.	Nagpore
g. 6.	Beverley, H. Esq., C. S.	Calcutta
ne 4.	†Bhan Daji, Dr.	Bombay
ly 2.	Bholanath Mullick, Bábu.	Calcutta
v. 2.	Bhoodeb Mookerjea, Bábu.	Chinsurah
ly 15.	*Birch, Major-General Sir R. J. H., K. C. B.	Europe
r. 4.	*Blaggrave, Major T. C., 26th Regt., B. N. I.	Europe
st. 7.	Blane, Lieut.-Col. S. J.	Calcutta
r. 4.	Blanford, H. F. Esq., A. R. S. M., F. G. S.	Calcutta
g. 3.	*Blanford, W. T. Esq., A. R. S. M., F. G. S. Geol. Surv.	Abyssinia
ril 6.	Blochmann, H. Esq., M. A.	Calcutta
g. 2.	*Bogle, Lieut.-Col. Sir A., Kt.	Europe
g. 3.	Bolie, Chand Singh, Bábu.	Calcutta
ne 6.	Bourke, W. M. Esq.	Calcutta
y 1.	†Bonavia, M. M. Esq., M. D. Asst. Surg.	Lucknow
t. 12.	†Bowring, L. B. Esq., B. C. S.	Bangalore
v. 1.	*Boycott, Dr. T., B. M. S.	Europe
y 3.	†Bradford, C. W. V. Esq.	Hoogly
r. 7.	Brandis, Dr. D.	Calcutta
t. 3.	Brandreth, Hon'ble J. E. L.	Calcutta

Date of Expedition		
1864 Dec. 7.	Branson, J. H. A. Esq.	Calcutta
1862 Jan. 15.	*Briggs, Lieut.-Col. D.	Europe
1866 April. 4.	†Broderick, H. C. Esq., M. D.	Augur
1847 June 2	*Brodie, Capt. T., 5th Regt., B. N. I.	Europe
1867 Feb. 6.	Brooks, Col. J. C.	Barrackpore
1866 Jan. 17.	†Brown, Lieut.-Col. D.	Amherst
1860 Nov. 7.	†Browne, Capt. Horace. A.	Moulmein
1866 June 6.	†Brownfield, C. Esq.	Gowhatty
1866 June 6.	Buckle, Dr. H. B., C. B.	Calcutta
1856 Sept. 3.	Busheerooddin, Sultan Mohammad	Chinsurah
1867 Sept. 4.	†Butler, Lieut. J.	Assam
1867 June 5.	Calcutta, Right Rev., Lord Bishop.	Calcutta
1860 June 6.	†Campbell, C. J. Esq., C. E.	Kamptee
1859 Sept. 7.	*Campbell, Dr. A.	Europe
1863 June 3.	†Campbell, Hon'ble G.	Nagpore
1860 Jan. 3.	†Carnac, H. Rivett, Esq., B. C. S.	Nagpore
1865 Nov. 1.	†Carnegy, P. Esq.	Fyzabad
1867 Dec. 4.	Chambers, F. J. Esq.	Calcutta
1860 Oct. 3.	†Christian, J. Esq.	Moughyr
1867 Dec. 4.	†Chisholm, J. W. Esq.	Belaspore
1863 Aug 5	†Chunder Nath Roy, Cowar.	Natore
1863 April 1.	Cleghorn, Dr. H.	Calcutta
1864 May 4.	†Cline, Dr. G. W., F. G. S., LL. D.	Nagpore
1861 Sept. 4.	†Cockburn, J. F. Esq., C. E.	Kochurbar
		Colnery
1862 April 2.	Colles, J. A. P. Esq., M. D.	Calcutta
1851 Mar. 5.	*Colvin, J. H. B. Esq., B. C. S.	Europe
1860 Dec. 5.	*Cooper, F. H. Esq., B. C. S.	Europe
1857 Mar. 4.	*Cowell, E. B. Esq., M. A.	Europe
1866 May 2.	*Cox, W. H. Esq.	Europe
1866 Jan. 17.	Crawford, J. A. Esq., C. S.	Calcutta
1861 July 3	*Crockett, Oliver R. Esq.	China
1867 Feb. 6.	Croft, A. W. Esq.,	Calcutta
1867 Aug. 7.	†Curran, R. H. Esq., L. R. C. S. I. L. K. R. C. P.	Port Blair
1868 Feb. 7.	†Daly, N. Esq.	Myanong Birma
1862 April 2.	*Dalrymple, F. A. E. Esq., C. S.	Europe
1847 June 2.	†Dalton, Lieut.-Col. E. T., 9th Regt B. N. I.	Chota Nag- pore
1861 Mar. 6.	†Davey, N. T. Esq., Revenue Survey.	Dacca
1865 May 3.	†Davies, C. Esq.	Rotasghur
1861 Nov. 6.	†Davies, R. H. Esq., B. C. S.	Oudh
1864 July 6.	Debendra Mullick, Babu.	Calcutta

lection.		
ine 4.	†DeBourbel, Major R., Bengal Engrs.	Assam
ine 5.	*Denison, His Excellency Sir W. K. C. B.	Europe
ib. 4.	†Deo Narain Singh, Hon'ble Rajah.	Benares
ar. 6.	*Devereux, Hon'ble H. B., B. C. S.	Europe
ay 7.	†Dhnpati Sinha Dooghur, Roy Bahadur.	Azimgunge
pt. 7.	Dickens, Lieut.-Col. C. H.	Calcutta
ov. 7.	Digumber Mitra, Bábu.	Calcutta
pt. 7.	*Douglas, Lieut.-Col. C.	Europe
ec. 7.	*Dunlop, H. G. Esq.	Europe
n. 4.	†Duka, Dr. T.	Simla
ne 5.	†Duthoits, W. Esq., C. S.	Mirzapore
ay 1.	*Earle, Capt. E. L. Bengal Artillery.	Europe
ay 6.	*Eatwell, Dr. W. C. B.	Europe
ct. 7.	*Edgeworth, M. P. Esq., B. C. S.	Europe
ay 6.	†Edgar, J. W. Esq., B. C. S.	Cachar
ib. 1.	†Egerton, P. H. Esq., B. C. S.	Umritsar
n. 7.	*Elliott, Sir Walter, late M. C. S.	Europe
ov. 2.	†Elliott, C. A. Esq., B. C. S.	Furruckabad
pril 1.	†Ellis, Hon'ble R. S., C. S. C., B.	Madras
ar. 5.	*Ellis, Lieut.-Col. R. R. W. 23rd Regt. B. N. I.	Europe
ov. 1.	†Elphinstone, Capt. M. W. 4th Regt. B. N. I.	Lahore
n. 9.	*Erskine, Hon'ble C. J., Bombay C. S.	Europe
ug. 6.	*Erskine, Major W. C. B.	Europe
ct. 7.	Ewart, Dr. J.	Calcutta
ug. 6.	*Eyre, Col. Vincent, C. B.	Europe
ine 7.	Fawcus, Dr. J.	Calcutta
ay 7.	Fayrer, Dr. J., B. M. S.	Calcutta
n. 15.	†Fedden, Francis, Esq., Geol. Survey.	Bombay
ug. 2.	Fenn, S. Esq.	Calcutta
ct. 12.	†Fisher, A, Esq.	China
ar. 7.	*Fitzwilliam, Hon'ble W. S.	Europe
pril 5.	†Fleming, Dr. J. M. 29th P. N. I.	Nimar Cent. Provinces
pril 3.	†Ford, Lieut.-Col. B.	Port Blair
ib. 6.	†Forrest, R. Esq., Civil Engineer.	Etawah
ec. 2.	†Forsyth, Lieut. J.	Nagpor
ine 3.	†Forsyth, T. D. Esq., C. B.	Punjabe
ar. 7.	*Frere, His Excellency Sir H. Bartle, K. C. B., B. C. S.	Europe
ct. 12.	†Furlong, Major J. G. R.	Agra
ec. 7.	Futteh, Ali, Maulvi.	Calcutta

Date of Election.			
1867 Sept. 4.	Fyfe, W. The Rev.	Calcutta	
1849 Sept. 5.	†Fytche, Lieut.-Col. A. 70th Regt. B. N. I.	Rangoon	
1866 Jan. 17.	G M. Tagore, Esq.	Calcutta	
1864 Aug. 11.	†Garrett, C B. Esq., C. S.	Chittagong	
1859 Aug. 3.	Gastrell, Lieut.-Col. J. E., 18th Regt. N. I., Rev. Survey.	Calcutta	
1867 Dec. 4.	Gay, E. Esq.	Calcutta	
1867 Sept. 4.	Gauvain, Capt. V.	Calcutta	
1859 Sept. 7.	Geoghegan, J. Esq., B. C. S.	Calcutta	
1865 June 7.	†Giles, A. H. Esq.	Dinajpore	
1842 Sept. 2.	*Gladstone, W. Esq.	Europe	
1867 May 1.	*Glover, the Hon'ble F.	Europe	
1859 Sept. 7.	*Goodove, E. Esq., M. D.	Europe	
1862 July 2.	Gordon, J. D. Esq., C. S.	Calcutta	
1864 Dec. 5.	†Gooroochurn Dáss Bábu.	Jungipore	
1862 Feb. 5.	†Gourdoss Bysack, Bábu.	Mannbhoon	
1863 Nov. 4.	†Gowan, Major J. G.	Morar, Gwalior	
1859 Dec. 7.	*Grant, Sir J. P., K. C. B.	Europe	
1860 Jan. 4.	*Grant, T. R. Esq.	Europe	
1867 Aug. 7.	Granville, W. L. Esq.	Calcutta	
1867 June 5.	†Gregory Lieut. J. Depy. Comr.	Naga Hills	
1860 July 4.	Grey, Hon'ble W., B. C. S.	Calcutta	
1866 June 6.	*Gribble, T. W. Esq., B. C. S.	Europe	
1861 Sept. 4.	†Griffin, L. Esq., B. C. S.	Gurdaspore Punjab	
1860 Nov. 7.	†Griffith, R. T. H. Esq.	Benares	
1849 Aug. 1.	Grote, A. Esq., B. C. S., F. L. S.	Calcutta	
1861 Feb. 6.	†Growse, F. S. Esq., B. C. S.	Mynpoorie	
1862 Feb. 5.	*Guthrie, Col. C. S., Bengal Engrs.	Europe	
1867 July 3.	Hacket, O. A. Esq.	Calcutta	
1847 June 2.	*Hall, F. E. Esq., M. A., D. C. L.	Europe	
1866 Jan. 17.	†Hamilton, Major T. C.	Amherst B. Birmah	
1863 June 3.	*Hamilton, Col. G. W.	Europe	
1855 Mar. 7.	†Hamilton, R. Esq.	Wardah	
1828 Nov. 12.	*Hamilton, Sir R. N. E., Bart., B. C. S.	Europe	
1847 May 5.	*Hannington, Col. J. C., 68th Regt. N. I.	Europe	
1859 Oct. 12.	*Hardie, Dr. G. K.	Europe	
1866 Nov. 7.	Harendra Krishna Kumar.	Calcutta	
1862 Oct. 8.	*Harington, Hon'ble H. B.	Europe	
1860 Oct. 3.	†Harris, E. B. Esq., C. S.	E. I. Railw Rohnee V Deoghur	
1867 Dec. 4.	Harris J. S. Esq.	Calcutta	

date of Election.

61 Feb. 6.	†Harrison, A. S. Esq., B. A.	Nyneetal
59 Oct. 12.	†Haughton, Lieut.-Col J. C., C. S. I.	Cooch Behar
62 Aug. 6.	*Heeley, W. L. Esq., C. S.	Europe
66 April 4.	Henry, N. A. Esq.	Calcutta
59 Aug. 3.	†Henessey, J. B. N. Esq.	Bangalore
53 July 6.	†Herschel, W. J. Esq., B. C. S.	Midnapore
54 Mar. 1.	*Hichens, Lieut. W., Bengal Engrs.	Europe
66 Jan. 17.	†Hicks, J. G. Esq.	Lahore
67 Mar. 6.	Hill, F. Esq.	Calcutta
60 May 2.	Hobhouse, C. P. Hon'ble B. C. S.	Calcutta
50 Sept. 7.	†Hopkinson, H. Lieut.-Col. H.	Assam
63 July 1.	†Horne, C. Esq. C. S.	Mynpoorie
60 Mar. 7.	Hovenden, Major J. J., Bengal Engrs.	Calcutta
63 Jan. 15.	†Howell, M. S. Esq., C. S.	Meerut
67 Sept. 4.	†Hughes, A. J. Esq. C. E.	Dariabad
67 Aug. 17.	†Hughes, T. H. Esq. A. R. S. M., F. G. S.	Hazarebagh
67 Aug. 7.	*Hughes, Lieut. W. G.	Calcutta
66 Feb. 7.	Hoyle, G. W. Esq.	Calcutta
67 May 1.	†Hyatt, Dr. B. N. Civil Surgeon.	Raneeh
66 Mar. 7.	†Irvine, W. Esq., C. S.	Mozuffernug-
60 Jan. 4.	†Innes, Major J. J. M.	Punjab [ger
62 Oct. 8.	†Irwin, Valentine, Esq., C. S.	Tipperah
53 Dec. 7.	†Ishureeprasád Sinha, Bahadur, Rajah	Benares
64 Sept. 7.	Jackson, Hon'ble E.	Calcutta
61 Jan. 9.	Jackson, Hon'ble L. S., B. C. S.	Calcutta
61 April 7.	*Jackson, W. B. Esq., B. C. S.	Europe
61 Dec. 4.	James, Major H. R. C. B.	Calcutta
64 Sept. 7.	*Jardine, R. Esq., C. S.	Europe
65 Dec. 3.	†Jerdon, Dr. T. C., M. M. S.	Mussoorie
67 Mar. 6.	†Jogindra nath Mulliok Babu.	Andul
66 Feb. 7.	†Johnson, W. H. Esq.	Dehra
67 June 2.	*Johnstone, J. Esq.	Europe
62 Mar. 5.	*Johnstone, Capt. J., Assistant Commissioner.	Europe
67 Dec. 4.	†Johnstone, Lieut. J. Supt. Elephant Klamddas.	Cuttack
69 Sept. 7.	*Jones, R. Esq.	Europe
65 June 7.	†Joykissen, Dáss Bahadur, Rajah.	Allyghur
66 Mar. 7.	Kadar Nath Mookerjee.	Bhowanipore
68 Feb. 3.	Kaliprosonno Singha. Bábu.	Calcutta
63 July 1.	*Kane, H. S. Esq., M. D.	Europe
60 April 3.	*Kay, The Rev. W., D. D.	Europe
61 Dec. 15.	†Kempson, M. Esq., M. A.	Bareilly
67 Dec. 4.	†King, G. Esq. M. D.	Joudpore
67 Mar. 6.	†King, Capt. H. W.	India

Date of Election.			
1862	Jan. 15.	†King, W. Esq., Jr., Geol. Survey.	Madras
1867	Mar. 6.	Knox, G. E. Esq. C. S.	Calcutta
1839	Mar. 6.	*Laidlay, J. W. Esq.	Europe
1861	Mar. 6.	*Laing, Hon'ble S.	Europe
1863	Sept. 2.	Lane, T. B. Esq., B. C. S.	Calcutta
1861	Dec. 3.	†Layard, Major F. P.	Bhagulpor
1852	April 7.	Lees, Major W. N., LL. D.	Calcutta
1859	Dec. 7.	Leonard, H. Esq., C. E.	Calcutta
1865	June 7.	†Lewin, Capt. T. H.	Chittagong
1866	Feb. 6.	*Liebig, Dr. G. Von., B. M. S.	Europe
1860	Jan. 4.	Lindsay, E. J. Esq.	Calcutta
1862	Dec. 3.	Lobb, S. Esq., M. A.	Hughly Coll.
1864	Nov. 2.	Locke, H. H. Esq.	Calcutta
1866	May 2.	*Lovett, Lieut. B.	Lapsan
1828	July 2.	*Low, Major-General Sir J., K. C. B.	Europe
1866	Jan. 17.	†Low, James, Esq., G. T. S.	Dehra Dun
1861	April 3.	Lunsden, Lieut.-Col. P. S.	Calcutta
1854	Nov. 1.	*Lushington, F. A. Esq., B. C. S.	Europe
1866	Mar. 7.	†Macdonall, A. P. Esq.	Monghyr
1866	June 6.	Macdonald, Major J. Staff Corps.	Calcutta
1848	April 5.	†MacLagan, Lieut.-Col. R., F. R. S. E.	Lahore
1866	Jan. 17.	*Macgregor, Lieut. C.	Europe
1865	Nov. 1.	Mackenzie, A. Esq., C. S.	Calcutta
1853	April 6.	Mackray, Dr. A. C.	Calcutta
1867	July 3.	Mackenzie, C. S., M. D.	Calcutta
1867	July 3.	Macnamara, Dr. C.	Calcutta
1863	Jan. 15.	*Maine, Hon'ble H. S.	Europe
1867	April 3.	†Mainwaring, Major G.	Darjeeling
1860	Jan. 4.	Mair, D. K. Esq., M. A.	Calcutta
1865	Mar. 1.	Malleson, Major G. B.	Calcutta
1862	Sept. 3.	†Mallet, F. R. Esq.	Nowgong Ben- Jelund
1860	July 4.	†Man, E. G. Esq.	Burdwan
1852	Nov. 3.	Manickjee Rustomjee, Esq.	Calcutta
1861	June 5.	†Man Sinha Bahadur, Mahárajah.	Orh
1867	Mar. 6.	Markby, The Hon'ble W.	Calcutta
1864	Aug. 11.	*Marks, Rev. J. Ebenezer.	Europe
1850	Jan. 2.	*Marshman, J. C. Esq.	Europe
1863	Oct. 7.	†Martin, T. Esq., C. E.	Gowhatty
1863	Nov. 4.	*McClelland, Dr. J.	Europe
1837	Oct. 4.	†McLeod, Hon'ble D. F., C. B., B. C. S.	Lahore
1860	Mar. 7.	†Medlicott, H. B. Esq. F. G. S.	Garrow Hill
1861	Feb. 6.	Melville, Capt. A. B., late 67th N. I. Surv. Genl's Dept	Calcutta
1855	Nov. 7.	*Mildilton, J. Esq.	Europe
1850	April 3.	*Mills, A. J. M. Esq., B. C. S.	Europe

Election.		
April 3.	Mohindralal Sircar, Dr.	Calcutta
April 7.	†Money, D. J., B. C. S.	Bhagulpore
Feb. 6.	*Money, J. W. Esq.	Europe
Mar. 6.	†Montgomerie, Capt T. G.	Dera Doon
July 5.	†Morland, Major J.	Delhi
Dec. 6.	†Morris, G. G. Esq., B. C. S.	Backergunge
June 1.	†Moula Bukhsh, Khan Bahadur, Maulvi.	Patna
July 5.	*Muir, J. Esq.	Europe
Oct. 11.	Muir, Hon'ble W., B. C. S.	Calcutta
July 2.	*Napier, Major-General Sir R., K. C. B.	Abyssinia
May 1.	Nelson, J. B. Esq.	Calcutta
Nov. 7.	*Newmarch, Lieut.-Col. C. D.	Europe
Feb. 1.	†Newul Kishwar, Moonshee.	Lucknow
Sept. 1.	*Nicholls, Capt. W. T., 24th Regi- ment, M. N. I.	Europe
Jan. 15.	Norman, Hon'ble J. P.	Calcutta
June 5.	Obhoy Churn, Mullick, Babu.	Calcutta
June 4.	†Oldham, C. Esq., Geological Survey.	Madras
June 4.	Oldham, T. Esq., LL. D, F. R. S.	Calcutta
Aug. 7.	†Oldham, A. Esq., C. E.	E. B. Railway. Kooshtea
Dec. 7.	Onslow, D. B. Esq.	Barrackpore
July 4.	†Ormsby, M. H. Esq.	Chota Nagpore
June 7.	*O'Shaughnessy, Sir W. B.	Europe
Feb. 10.	*Ousely, Major W. R.	Europe
Mar. 2.	*Palmer, Dr. W. J.	Europe
May 7.	Partridge, S. B. Esq., M. D.	Calcutta
Feb. 6.	Paul, J. Esq.	Calcutta
Feb. 1.	*Pearse, Major G. G.	Europe
Mar. 6.	Peary Mohun Mookerjee, M. A.	Otturparah
Mar. 2.	†Pellew, F. H. Esq., C. S.	Burrisal
Sept. 6.	†Peppe, J. H. Esq.	Gya
Nov. 6.	Petit, Mons. Eugene.	Calcutta
July 1.	*Phayre, Lt -Col. A. P., C. B.	Europe
Nov. 2.	Phear, Hon'ble J. B.	Calcutta
Sept. 4.	Place, Mons. V. Consul Gen. France	Calcutta
Oct. 8.	†Poolin Behary Sen, Bábu.	Berhampore
Mar. 6.	Pratt, Ven'ble Archdeacon J.H., M.A.	Calcutta
Jan. 4.	Preonath Sett, Bábu.	Calcutta
Mar. 9.	*Prinsep, C. R. Esq.	Europe
Feb. 1.	Prosonno Coomar Tagore, Bábu.	Calcutta

Date of Election.				
1864	Mar.	2.	*Trevor, Lt. E. A. Royal Eng.	Europe.
1864	Sept.	4.	*Tween, A. Esq., Geological Survey.	Europe
1868	May	6.	Tyler, Dr. J.	Mynpowrie
1860	May	2.	†Vanrenen, Capt. A., D. late 71st B. N. I.	Camp Baratch Oudh
1864	Feb.	3.	†Verchero, A. M., Esq., M. D.	Jellunder
1864	April	6.	†Vijayarāma Gajapati Raj Munnia Sultan Bahadur, Maharajah Mirza.	Vizianagaram
1865	Nov.	1.	Waldie, D. Esq.	Calcutta
1861	May	1.	†Walker, Lt.-Col. J. T., Bom. Engrs.	Dehra Doon
1868	Dec.	2.	†Walker, A. G. Esq. C. S.	Khyrabad Oudh
1868	May	6.	*Wall, P. W. Esq., C. S.	Europe
1868	Oct.	7.	Waller, Dr. W. K.	Calcutta
1868	Dec.	2.	Walters, Rev. M. D. C.	Calcutta
1862	Jan.	15.	†Ward, G. E. Esq., B. C. S.	Meerut
1852	July	7.	*Ward, J. J. Esq., B. C. S.	Europe
1859	July	6.	*Warrand, R. H. M. Esq., B. C. S.	Europe
1865	May	3.	*Waterhouse, Lieut. J., Royal Ar- tillery,	Europe
1854	July	5.	*Watson, J. Esq., B. C. S.	Europe
1847	Nov.	3.	*Wagh, Major-General Sir A. S., C. B., F. R. S., F. R. G. S.	Europe
1867	Feb.	6.	†Westmacott, E. V. Esq., C. S., B. A.	Maulbroom
1862	Oct.	8.	Wheeler, J. T. Esq.	Calcutta
1867	Aug.	7.	†Wileox, F. Esq. Bengal Police,	Maulbroom
1864	Mar.	2.	Wilkinson, C. J. Esq.	Calcutta
1861	Sept.	4.	†Williams, Dr. C., H. M.'s 68th Regt.	Rangoon
1867	Jan.	16.	†Williamson Lieut. W. J.	Goalparah
1867	Mar.	6.	†Willson, W. G. Esq. B. A.	Calcutta
1859	Sept.	7.	†Wilson, W. L. Esq.	Sangor
1859	Aug.	3.	†Wilmot, C. W. Esq.	Pakur
1865	Feb.	1.	†Wilmot, E. Esq.	Delhi
1866	Mar.	7.	†Wise, Dr. J. F. N.	Dacca
1867	July	8.	†Wood, Dr. J. J.	Saugor
1861	May	7.	Woodrow, H. Esq., M. A.	Calcutta
1859	Mar.	2.	*Wortley, Major A. H. P.	Europe
1862	Aug.	6.	Wylie, J. W. Esq., Bombay C. S.	Calcutta
1855	April	4.	*Young, Lt.-Col. C. R.	Europe
1856	July	2.	*Yule, Lt.-Col. H.	Europe

LIST OF HONORARY MEMBERS.

Date of Election			
25 Mar.	9.	M Garcin de Tassy, Membre de l' Inst.	Paris
26 „	1.	Sir John Phillippart.	London
29 July	1.	Count De Noe.	Paris
31 „	7.	Prof. C. Lassen.	Bonn
34 Nov.	5.	Sir J. F. W. Herschel, F. R. S.	London
34 „	5.	Col. W. H. Sykes, F. R. S.	London
35 May	6.	Prof. Lea.	Philadelphia
12 Feb.	4.	Dr. Ewald.	Göttingen
12 „	4.	Right Hon'ble Sir Edward Ryan, K.	London
13 Mar.	30.	Prof. Jules Mohl, Memb. de l' Institut.	Paris
17 May	5.	His Highness Hekekyan Bey.	Egypt
17 Sept.	1.	Col. W. Munro.	London
17 Nov.	3.	His Highness the Nawab Nazim of Bengal.	Moorshedabad
18 Feb.	2.	Dr. J. D. Hooker, R. N., F. R. S.	Kew
18 Mar.	8.	Prof. Henry Princeton.	United States
13 April	6.	Major-Gen. Sir H. C. Rawlinson, K. C., F. R. S., D. C. L.	London
14 Aug.	2.	Col. Sir Proby T. Cautley, K.C .B., F. R. S.	London
8 July	6.	B. H. Hodgson, Esq.	Europe
9 Mar.	2.	Hon'ble Sir J. W. Colvile, Kt.	Europe
10 „	7.	Prof. Max Muller.	Oxford
10 Nov.	7.	Mons. Stanislas Julien.	Paris
10 „	7.	Dr. Robert Wight.	London
10 „	7.	Edward Thomas, Esquire.	London
10 „	7.	Dr. Aloys Sprenger.	Germany
10 „	7.	Dr. Albrecht Weber.	Berlin
15 Sept.	6.	Edward Blyth, Esquire.	Europe

LIST OF CORRESPONDING MEMBERS.

14 Oct.	2.	Macgowan, Dr. J.	Europe
16 June	4.	Kremer, Mons. A. Von.	Alexandria
16 „	4.	Porter, Rev. J.	Damascus
6 „	4.	von Schlagintweit, Herr H.	Berlin
6 „	4.	Smith, Dr. E.	Beyrout
6 „	4.	Tailor, J. Esquire.	Bussorah
6 „	4.	Wilson, Dr.	Bombay
7 Mar.	4.	Neitner, J. Esquire.	Ceylon
8 Mar.	3.	von Schlagintweit, Herr H. R.	Berlin
9 Nov.	2.	Frederick, Dr. H.	Batavia
9 May	4.	Bleeker, Dr. H.	Batavia
10 Feb.	1.	Baker, The Rev. H.	E. Malabar
10 „	1.	Swinhoe, R., Esq., H. M.'s Consulate.	Amoy

Date of Election				
1860	April	4.	Hung, Dr. M.	Poonah
1861	July	3.	Gosche, Dr. R.	Berlin
1862	Mar.	5.	Murray. A., Esquire.	London
1863	Jan.	15.	Goldstücker, Dr. T.	London
1863	July	4.	Barnes. R. H. Esquire.	Ceylon
1866	May	7.	von Schalgintweit. Prof. E.	Prussia
1866	„	7.	Sherring. Rev. M. A.	Europe

LIST OF ASSOCIATE MEMBERS.

1835	Oct.	7.	Stephenson, J., Esquire.	Europe
1838	Feb.	7.	Keramut Ali, Saïod.	Hooghly
1843	Dec.	6.	Long. Rev. J.	Calcutta
1865	May	3.	Dall, Rev. C. H. A.	Calcutta

ELECTIONS IN 1867.

Ordinary Members.

G. A. D. Anley, Esq.	Calcutta
Lieut. W. J. Williamson,	Goalpara
Col J. C. Brooke,	Barrackpore
A. W. Croft, Esq.	Calcutta
J. A. Paul, Esq.	Calcutta
Lieut.-Col. B. Reid,	Chamila
E. V. Westmacott, Esq. C. S., B. A.	Manbhoom
The Hon'ble W. Markby,	Calcutta
Baboo Peary Mohun Mookerjee, M. A.	Utturparah
Capt. H. W. King, P. L. O. Service,	Calcutta
Baboo Jogindra Mullick,	Andul
G. E. Knox, Esq. B. C. S.	Calcutta
W. G. Wilson, Esq. B. A.	Calcutta
Capt. T. G. Montgomerie,	Dehra Dhora
F. Hill, Esq.	Calcutta
Lieut.-Col. B. Ford,	Port Blair
Baboo Mohindralal Sircar,	Calcutta
Major G. Mainwaring,	Darjiling
The Hon'ble Nawab Sir Sheriful, Omrah Bahadur. K.	C. S. I. Madras
The Hon'ble F. Glover,	Calcutta
S. C. Mackenzie, Esq. M. D.	Calcutta
Lieut. E. J. Steel, R. A. Rev. Sur.	Assam
E. Bonavia, Esq. M. D.	Lucknow

B. Nelson, Esq.	Calcutta
B. N. Hyatt, Civil Surgeon,	Ranche
Duthoit, Esq. C. S.	Merzapore
ut. J. Gregory, Depty. Commissioner,	Naga Hills
cutta Lord Bishop Cal. The Right Rev.	Calcutta
oo Obboy Churn Mullick,	Calcutta
M. Scott, Esq.	Calcutta
C. Macnamara,	Calcutta
A. Belletty, Esq.	Cherrapunjee
J. I. Wood,	Calcutta
A. Hacket, Esq.	Calcutta
F. Ameroy, Esq.	Lahore
H. Hughes, Esq. A. R. S. M., F. G. S.	Lahore
L. Granville, Esq.	Calcutta
I. Curran, Esq. L. R. C. S., J. L. K., Q. C. P.	Port Blair
Vilcox, Esq. Beng. Police.	{ Purulia,
	{ Manbhoom
	{ E. B. Ry.
	{ Kooshtea
Oldham, Esq. C. E.	Calcutta
A. C. Macrae,	Calcutta
Rev. W. C. Fyfe,	Calcutta
t. V. Gauvain,	Calcutta
is. V. Place, Consul, Gen. France,	Calcutta
r. Hughes, Esq. C. E..	Daria Dabad
at. J. Butler,	Assam
is. Eugene Petit,	Calcutta
b. Harris, Esq.	Calcutta
H. Stevens, Esq.	Calcutta
Jay, Esq.	Calcutta
r. Chambers, Esq.	Calcutta
King, Esq. M. D.	Gornah
at. J. Johnstone,	Midnapore
W. Chisholm, Esq.	Belaspore

LOSS OF MEMBERS DURING THE YEAR, 1867.

ORDINARY MEMBERS.

By retirement.

R. D. Bird,	Howrah
t. H. Trotter,	Meerut
Hon'ble G. Loch,	Calcutta
V. Hatton, Esq.	Calcutta
V. Clementson, Esq.	Tumlook
W. G. Murray,	Mussoorie
H. Stevens,	Futtyghur
Leeds, Esq.	Burmah
L. Matthews, Esq.	Calcutta

Lieut -Col. H. Raban,	Calcutta
Capt. M. Loyd.	Toung-hoo
Capt. W. Ramsden.	Cawnpore
Lieut -Col. H. Ballard, C. B.	Calcutta
Baboo Harry Dass Dutt,	Calcutta
Capt. G. C. Depree.,	Chota Nagpore
Baboo Bunkin Chunder Chatterjee,	Calcutta
Baboo Soorut Nath Mullick,	Howrah
The Hon'ble E. Drummond,	Allahabad
E. S. Robertson, Esq.	Azimgur
The Rev. J. C. Bronne,	Calcutta

By Death.

Lieut.-Col. W. D. Short, R. E.	Europe
Major-Genl. Sir J. B. Hearsay, K. C. B.	Europe
The Hon'ble Sumboo Nath Pandit,	Bhowanipore
Baboo Jadava Krishna Sing.	Calcutta
Capt. A. R. Fuller.	Lahore

HONORARY MEMBERS.
Deceased.

M. Reinand, Membre de l'Institut Prof. d'Arabe [in 1866]	
Prof. F. Bopp,	Europe
Col. Sir George Everest, Kt. F. R. S.	Europe
Rajah Radha Kant Deb, Bahadur K. S. I.	Brindaband

Proceedings of the Asiatic Society.

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY,
FOR
THE YEAR 1867.

STATEMENT

Abstract of the Cash Account

RECEIPTS.				1867.	1868.
ADMISSION FEE.					
Received from New Members,	Ra.	1,504	0 0	1,504	0 0
				1,290	0 0
CONTRIBUTIONS.					
Received from Members,	...	8,373	13 6	8,373	13 6
				8,676	0 0
JOURNAL.					
Sale proceeds of, and Subscription to the Journal of the Asiatic Society,		2,749	10 0		
Refund of Postage Stamps,	...	60	4 6		
Ditto of Packing Charges,	...	5	7 3		
Ditto of Freight,	...	5	0 0		
				2,820	5 9
				1,327	1 0
LIBRARY.					
Sale proceeds of Books, ...	...	417	12 0		
Refund of Freight, ...	...	19	14 0		
				497	10 0
				610	2 9
SECRETARY'S OFFICE.					
Refund of Postage Stamps,	...	13	12 6		
Ditto of Packing Charges,	...	2	8 0		
Savings, ...	...	1	1 3		
				17	5 9
				22	13 0
GENERAL ESTABLISHMENT.					
Savings, ...	...	1	4 6		
				1	4 6
				17	1 0
VESTED FUND.					
Received Interest on the Government Securities from the Bank of Bengal,		110	0 0		
				110	0 0
				8,142	8 6
COIN FUND.					
Sale proceeds of Silver Coins,	...	8	8 0		
				8	8 0
				5	0 0
MUSEUM TRANSFER ACCOUNT.					
Refund of the amount advanced,	...	111	1 0		
				111	1 0
O. P. FUND.					
Refund of the Loan paid on the 31st August,	...	4	6 11		
Received by Transfer from Messrs. Williams and Norgate, Sale proceeds of Bibliotheca Indica through them, ...	...	161	4 0		
				165	10 11
SIR WILLIAM JONES'S MONUMENT.					
Received from the Government of India for repairing the Monument,	...	680	0 0		
				680	0 0
Carried over, Ra.				14,229	11 5

Asiatic Society for 1867.

DISBURSEMENTS.				1867.	1866.			
GENERAL.								
...	...	Rs.	115 1 0					
Charges,	...	...	3,145 2 9					
of Postage Stamps,	...	...	183 6 9					
Printing and Engraving Charges,	...	...	469 6 6					
on Sale of Books,	...	...	103 13 9					
of Journal,	...	...	7 8 0					
Papers for the Journal,	...	...	318 15 9					
Charges,	...	...	6 1 0					
				4,349 7 6	2,799 15 10			
LIBRARY.								
to the Librarian, ...	...	...	840 0 0					
Account,	...	...	90 0 0					
Printing,	...	...	311 4 0					
on sale of Books,	...	...	61 13 3					
of Books,	...	...	1,848 4 9					
Custom Receipt Stamps,	...	...	1 0 0					
Charges,	...	...	13 11 6					
Stamps,	...	...	2 3 0					
Office Pankha-man,	...	...	24 2 6					
Charges,	...	...	14 14 6					
				3,207 5 6	5,250 10 9			
CLERK'S OFFICE.								
Establishment, ...	...	...	294 0 0					
of Office Establishment,	...	...	1,106 13 4					
of Postage Stamps,	...	...	92 9 0					
Stationery,	...	...	44 7 3					
Numbers of Army List,	...	...	25 0 0					
Copy of Bengal Directory,	...	...	10 0 0					
Copies of Sheet Almanac for	...	...	2 0 0					
and 1868,	...	...	7 8 0					
Blank Book,	...	...	31 8 0					
Charges,	...	...	2 7 0					
at Postage,	...	...	1 14 0					
Postage,	...	...	15 4 0					
Charges,	...	...		1,633 6 7	1,784 2 3			
RESERVE FUND.								
on to the Bank of Bengal for	...	...	0 4 4					
Interest on the Government	...	...		0 4 4	3,284 9 10			
ies,	...	...				
MUSEUM FUND.								
of Coins,	...	...	328 2 0					
Good case for the new Coin	...	...	79 0 0					
expenses for returned Coins,	...	...	4 8 0					
Postage on a parcel of Coins,	...	...	3 12 0					
Charges,	...	...	2 8 6					
				417 14 6	503 3 3			
Carried over, Rs.				9,608 6 5				

RECEIPTS.

Brought over, Rs. 14,239 11 5

MESSRS. WILLIAMS AND NORRIS.			
Received by Sale proceeds of their			
Books,	6 2 0		
Ditto from Babu Pratápachandra			
Ghoshia as deposit on their account,	6 0 0		
Ditto from Sayyid Karsinat Ali as			
deposit on their account, being the			
price of two numbers of the Kamil,	6 0 0		
Ditto by Books supplied to the As.			
Society,	281 10 0		
		299 12 0	4 4 0
DR. A. M. VERCHER.			
Refund of Banghy Expenses, ...	0 14 0		
		0 14 0	
H. BEVERLY, Esq.			
Refund of Postage Stamps, ...	0 13 0		
		0 13 0	
P. CARNEGIE, Esq.			
Refund of the amount advanced, ...	1 0 0		
		1 0 0	
A. G. WALKER, Esq.			
Refund of the Insufficient Postage, ...	7 0 0		
Received on Deposit,	6 0 0		
		13 0 0	
DR. C. BALLANTYNE.			
Received on account of the Journal, ...	307 0 0		
		307 0 0	
DAMODARA JETHA, Esq.			
Received on Deposit,	89 0 0		
		89 0 0	
REV. H. A. JÄESCHKE.			
Received by Sale proceeds of a Copy of			
Tibetan Grammar,	1 0 0		
		1 0 0	1 0 0
H. C. SUTHERLAND, Esq.			
Refund of Postage Stamps, ...	1 3 0		
		1 3 0	
C. J. CAMPBELL, Esq.			
Refund of Postage Stamps, ...	0 2 0		
		0 2 0	
G. W. CLINE, Esq.			
Received on Deposit,	10 0 0		
		10 0 0	
DR. J. L. STEWART.			
Refund of the amount paid for send-			
ing Library Books,	0 12 0		
		0 12 0	
LT. J. BUTLER.			
Received on Deposit,	7 8 0		
		7 8 0	
G. E. WARD, Esq.			
Refund of Postage Stamps, ...	0 14 0		
		0 14 0	
BABU PRASANNACUMÁRA THÁKURA.			
Refund of the amount paid on the			
24th October, 1866,	25 0 0		
		25 0 0	1,648 8
Carried over, Rs. 14,957 9 5			

Proceedings of the Asiatic Society.

DISBURSEMENTS.

Brought over, Rs. 9,608 6 5

DING.

nt, ...	...	...	480	0	0				
Lighting,	...	...	96	0	0				
to,	...	...	72	0	0				
,	...	...	5	8	0				
						653	8	0	2,634 15 0

IN MUSEUM.

ing Banghee for Skulls,	...	...	11	4	0				
o Bearing Postage,	...	...	1	8	0				
						12	12	0	6,272 11 3

CEM CATALOGUE.

preparing Catalogue,	...	...	706	2	3				
nd Charcoal for Branding									
ens,	...	...	19	6	6				
ring, 2 Brands for marking									
ens,	...	...	4	8	0				
of Stationery for copying									
ue,	...	...	21	4	0				
ird Catalogue,...	...	...	1	12	0				
r for keeping Catalogue,	...	...	1	2	0				
						754	2	9	

OGICAL GARDEN.

sh Envelopes for,	...	...	1	14	0				
						1	14	0	

ELLANEOUS.

the Mally,	...	...	57	0	0				
charges,	...	...	20	0	0				
charges,	...	...	147	0	6				
of Receipt Stamps,	...	...	6	0	0				
and cleaning a Clock,	...	...	16	0	0				
of a ream of Letter Paper,...	...	...	2	4	0				
charges,	...	...	3	13	0				
ig charges,	...	...	5	4	0				
of Wall Shades, &c.,	...	...	6	6	9				
e Bank of Bengal for Stamp-									
ques,	...	...	1	9	0				
rges,	...	...	31	11	0				
						297	0	3	362 4 9

IT AND Loss,

Thákura Sing,	...	...	144	0	0				
						144	0	0	

FUND.

oan,	...	...	45	13	9				
						45	13	9	

RS. WILLIAMS AND NORCATE.

ransfer to sale of Journal,	...	...	276	12	0				
o of Library,	...	...	10	12	0				
to of Bibliotheca Indica,									
.) ...	...	...	161	4	0				
						448	12	0	8 0 0

Carried over, Rs. 11,966 5 2

RECEIPTS.

			Brought over, Rs. 14,987 9 5					
BARU PERNACHANDRA BASAKA.								
Refund in full of the Amount paid him								
as advance,	...	...	95	0	0			
			<hr/>			95	0	0
BAPTIST MISSION PRESS.								
Received from the Hon'ble G. Camp-								
bell for Printing Charges,	...	...	52	8	0			
			<hr/>			52	8	0
MATHURAMOHANA KARA.								
Refund of the amount paid for prepar-								
ing Cabinet,	...	...	45	0	0			
			<hr/>			45	0	0
						200	0	0
M. S. HOWELL, Esq.								
Refund of Postage Stamps,								
...	...	...	0	2	0			
			<hr/>			0	2	0
M. H. ORMSBY, Esq.								
Refund of the amount paid on the								
30th November, 1867, ..	...	...	5	4	0			
			<hr/>			5	4	0

Carried over, Rs. 15,185 7 5

DISBURSEMENTS.

Brought over, Rs, 11,966 5 2

DR. C. BALLANTYNE.

for a Copy of Productive Resources

India, ... 7 0 0

by transfer to the Journal and

Library Account, ... 300 0 0

307 0 0

DAMODARA JETHA, Esq.

on his deposit, ... 89 0 0

89 0 0

REV. H. A. JÄESCHKE.

Insufficient Postage on a letter, 0 8 0

Postage for sending letter, ... 0 2 0

0 10 0

C. J. CAMPBELL, Esq.

Postage for sending a copy of a

part, ... 0 2 0

0 2 0

DR. J. L. STEWART.

Postage for sending Library Books, 0 12 0

0 12 0

LT. J. BUTLER.

Freight for sending Library

books, ... 1 8 0

for 2 Deal wood Insect Cases, ... 7 8 0

for Freight and Packing charges

ditto, ... 2 15 0

11 15 0

G. E. WARD, Esq.

Banghy Expenses for sending

Library Books, ... 2 0 9

2 0 0

0 14 0

BABU PRASANNACUMÁRA THÁKURA.

Freight for sending Books to

Messrs. Williams and Norgate, ... 25 0 0

25 0 0

BAPTIST MISSION PRESS.

for printing 300 copies of Words

and Phrases for the Hon'ble G.

Campbell, ... 5 0 0

5 0 0

A. G. WALKER, Esq.

Messrs. R. C. Lepage and Co. ... 6 0 0

6 0 0

M. S. HOWELL, Esq.

Postage for sending a copy of a Chart, 0 2 0

0 2 0

M. H. ORMSBY, Esq.

for a Deal wood Insect Case, ... 3 12 0

for an Insect Net, ... 1 8 0

5 4 0

GOVERNMENT NORTH WESTERN

PROVINCES.

Freight for sending Journal and

Proceeding, ... 10 14 0

10 14 0

14 8 0

Carried over, Rs. 12,430 0 2

Proceedings of the Asiatic Society.

RECEIPTS.

Brought over, Rs. 15,185 7 8

Carried over, Rs. 15,185 7 8

DISBURSEMENTS.

Brought over, Rs. 12,430 0 2

WELL, Esq.					
tha Pandita for copying					
..	...	...	74	4	0
			<u>74</u>	<u>4</u>	<u>0</u>
Esq.					
for sending Charts, ...			0	7	0
			<u>0</u>	<u>7</u>	<u>0</u>
JAMES, Esq.					
Stamps for sending					
books, &c. ...	...	...	3	2	0
			<u>3</u>	<u>2</u>	<u>0</u>
RAMSDEN.					
Stamps for sending					
..	...	...	0	2	0
			<u>0</u>	<u>2</u>	<u>0</u>
KINSON, Esq.					
Stamps for sending					
..	...	...	0	2	0
			<u>0</u>	<u>2</u>	<u>0</u>
EMLETT, Esq.					
Stamps for sending					
..	...	...	0	2	0
			<u>0</u>	<u>2</u>	<u>0</u>
E, Esq.					
and Packing charges for					
rare Books, ...	...	...	7	7	0
			<u>7</u>	<u>7</u>	<u>0</u>
BREEST, Esq.					
for returning a small					
coins, ...	...	...	2	5	0
			<u>2</u>	<u>5</u>	<u>0</u>
BOWSE, Esq.					
Postage on a Pam-					
..	...	...	0	1	0
			<u>0</u>	<u>1</u>	<u>0</u>
J. DALTON, ON ETHNOLO-					
GY OF BENGAL.					
Banghee on Packages of					
..	...	...	0	12	0
charges of the Rev.					
's Paper, ...	...	...	3	6	0
charges, ...	...	...	42	0	0
			<u>46</u>	<u>2</u>	<u>0</u>
MAINWARING.					
for sending Library					
..	...	...	2	4	0
			<u>2</u>	<u>4</u>	<u>0</u>
D. VANRENEN.					
for sending Library					
..	...	...	0	10	0
			<u>0</u>	<u>10</u>	<u>0</u>
Carried over, Rs.			12,567	0	2

Proceedings of the Asiatic Society.

RECEIPTS.

		Brought over, Rs. 15,185 7 5			
GOVERNMENT NORTH WESTERN PROVINCES.					
Refund of postage for sending Journal					
and Proceedings for 1866,		...	14	8	0
		<hr/>		14	8 0
					16 5 0
BALANCE OF 1866.					
In the Bank of Bengal, ...		...	830	2	0
Cash in hand, ...		...	63	3	2
		<hr/>		893	5 2
				<hr/>	
				Rs.	16,093 4 7
				<hr/>	

Examined,
Sd. PRATÁPACHANDRA GHOSHA,
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYSACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found correct,
Sd. J. ANDERSON PAUL, }
„ H. BLOCHMANN, } Auditors.

DISBURSEMENTS.

Brought over, Rs. 12,567 0 2

BALANCE.

the Bank of Bengal, ...

... 3,487 12 1

h in hand, ...

... 38 8 4

3,526 4 5

Rs. 16,093 4 7

Examined,

PRATÁPACHANDRA GHOSHA,

Ast. Secry.

tic Society, Bengal.

Errors and Omissions Excepted,

Sd. BUDDINATH BYSACK,

Cash Keeper,

Asiatic Society, Bengal.

Examined and found correct.

Sd. J. ANDERSON PAUL, } *Auditors.*
 „ H. BLOCHMANN, }

„ H. BLOCHMANN,

STATEMENT
Abstract of the Cash Account

RECEIPTS.			1867.	1868.
ORIENTAL PUBLICATIONS.				
Received by Sale of Bibliotheca,	Ra.	2,346 12 0		
Ditto by Subscription to ditto,	...	112 6 0		
Ditto by Sale of White Yajurveda,	...	38 0 0		
Refund of Postage Stamps,	...	58 10 9		
Ditto of Packing Charges,	...	2 0 0		
			2,558 12 9	2,549 12 0
GOVERNMENT ALLOWANCE.				
Received from the General Treasury,				
at 500 Rs. per month,	...	6,000 0 0		
			6,000 0 0	6,000 0 0
VESTED FUND.				
Received Interest on the Government				
Securities from the Bank of Bengal,	...	442 8 0		
			442 8 0	442 8 0
ASIATIC SOCIETY OF BENGAL.				
Received on Loan,	...	45 13 9		
			45 13 9	
VAJMAN ARAFI MODOOK, Esq.				
Received on Deposit,	...	120 0 0		
			120 0 0	
V. B. SOOBIAH, Esq.				
Received on Deposit,	...	1 9 6		
			1 9 6	
HIS HIGHNESS THE FIRST PRINCE OF TRAVANCORE.				
Received on Deposit,	...	1 8 3		
			1 8 3	
A. NARAIN ROW, Esq.				
Received on account of Bibliotheca				
Indica,	...	25 7 0		
			25 7 0	
K. ROGHUNATH ROW, Esq.				
Received on Deposit,	...	49 8 0		
			49 8 0	22 4 3
DAMODARA JETHA, Esq.				
Received on account of Bibliotheca				
Indica,	...	511 0 0		
			511 0 0	
DAMAROO BULLABH, Esq.				
Received on Deposit,	...	4 14 0		
			4 14 0	
DR. C. BALLANTYNE.				
Refund of Packing Charges,	...	2 14 0		
			2 14 0	
BAHU BRAJABHUSHANA DÁSA.				
Received from him on account of				
Bibliotheca Indica,	...	50 0 0		
			50 0 0	
Brought over, Ra.			9,813 15 3	

and for 1867.

DISBURSEMENTS.

1867. 1866.

L PUBLICATIONS.

Commission on the Sale of Books,	330	12	9
... ..	166	2	0
Charges,	27	8	0
Postage Stamps,	114	9	6
Charges,	31	0	0
... ..	4	2	0

674 2 3 456 13 3

FUND.

Commission to the Bank of Bengal			
on Interest on the Govern-			
ment Securities,	1	1	8

1 1 8 1 1 8

OF ORIENTAL WORKS.

Salary of the Librarian,	360	0	0
... ..	282	10	8
... ..	47	0	0
Charges on the Bank of Bengal for			
Charges,	1	9	0
Stationery,	54	8	0
Receipt Stamps,	3	0	0
Painting of the bottoms,	10	2	0
Charges for Cleaning Books,	6	0	0
Almirah Locks for the			
Library Cases,	63	0	0
Preparing Stock of the			
Indica,	105	6	3
... ..	50	1	6

983 5 5 869 15 9

Books,			
MSS.			
Charges,	33	12	0

33 12 0

SOCIETY OF BENGAL.

the Loan received on the			
1st, 1867,	4	6	11
Transfer to Sale proceeds of			
Indica through Messrs.			
and Norgate,	161	4	0

165 10 11

ABAJI MODOCK, Esq.

Transfer to the Bibliotheca			
... ..	120	0	0

120 0 0

MOBIAH, Esq.

Transfer to the Bibliotheca			
... ..	1	9	6

1 9 6

Carried over, Rs. 2,116 5 9

RECEIPTS.

Brought over Rs. 9,813 15 3

Carried over, Rs. 9,813 15 3

DISBURSEMENTS.

Brought over, Rs. 2,116 5 9

RAIN Row, Esq.

Transfer to the Bibliotheca

...	...	...	20	12	0			
			<hr/>			20	12	0

DARA JETHA, Esq.

Transfer to the Bibliotheca

...	...	...	305	10	0			
...			
...	...	...	24	4	9			
			<hr/>			329	14	9

L. BALLANTYNE.

Printing Charges for sending

...	...	...	2	14	0			
			<hr/>			2	14	0

BRAJABHUSHANA DASA.

Transfer to the Bibliotheca

...	...	...	42	8	6			
			<hr/>			42	8	6

MOO BULLABH, Esq.

Transfer to the Bibliotheca

...	...	...	0	4	0			
			<hr/>			0	4	0

KALICUMARA MITRA.

Messrs. D'Rozario and Co.,

...	...	...	1	9	0			
			<hr/>			1	9	0
						1	4	0

H. GRIFFITH, Esq.

Transfer to the Bibliotheca

...	...	...	74	6	0			
			<hr/>			74	6	0
						3	0	0

IRIYA ARANYAKA.

and Printing Charges,

...	...	...	368	0	0			
			<hr/>			368	0	0
						365	0	0

IRIYA BRAHMANA.

and Printing Charges,

...	...	...	368	0	0			
			<hr/>			368	0	0
						368	0	0

IGIR NAMAH.

and Printing Charges,

...	...	...	584	0	0			
			<hr/>			584	0	0
						2,634	4	6

HYA SARA.

Charges,

...	...	...	251	10	0			
			<hr/>			251	10	0

RYA DURPANA.

Charges,

...	...	...	779	8	0			
			<hr/>			779	8	0

LAYANA GRIHYA SUTRAS.

Charges,

...	...	...	100	0	0			
			<hr/>			100	0	0
						96	0	0

HAH NAMAH.

and Printing Charges,

...	...	...	3,796	0	0			
			<hr/>			3,796	0	0
						876	0	0

ANSA DARSANA.

and Printing Charges,

...	...	...	333	0	0			
			<hr/>			333	0	0
						762	0	0

ARA DIGVIJIYA.

Charges,

...	...	...	80	0	0			
			<hr/>			80	0	0

Carried over, Rs. 9,248 12 0

RECEIPTS.

				Brought over, Rs.	9,813	15	8
BABU SYAMACHARAN BANERJEE.							
Received on Deposit,	...	...	0	8	0		
						0	3
							0
BALANCE OF 1866.							
In the Bank of Bengal,	...	...	171	4	10		
Cash in hand,	...	...	2	4	5		
						173	9
							3
				Total, Rs.	9,987	11	6

Examined,
Sd. PRATÁPACHANDRA GHOSH,
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYSACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found correct,
Sd. J. ANDERSON PAUL, } *Auditors.*
„ H. BLOCHMANN, }

DISBURSEMENTS.

Brought over, Rs. 9,248 12 0

AKBARI.

ing Charges, ...	...	71	0	0				
ry to the Moonshee,	...	330	0	0				
ight for sending Ain i	...	25	0	0				
...	...				426	0	0	249 4 0

ICE.

ik of Bengal, ...	...	312	15	6				
nd, ...	...	0	0	0				
					312	15	6	

Rs. 9,987 11 6

ined,
PACHANDRA GHOSHA,
Secry.
iety, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYSACK,
Cash Keeper,
Asiatic Society, Benga

Examined and found Correct,
(Sd.) J. ANDERSON PAUL, }
„ H. BLOCHMANN, } Auditors.

In accordance with the announcement of the Council in the Annual Report read at the Annual General Meeting held on the 11th January, 1865, the Proceedings of the Society's meetings will henceforth be printed in parts separate from the Journal, to be issued monthly to all members and subscribers. They will be paged and indexed separately, so that at the close of each year, they may, at the option of members be bound up either in a small separate volume, or as a third division of the Journal.

The original papers which will henceforth form the Journal proper, will be classified under two heads, viz., Historical, Archaeological, Numismatic, Philological and Literary on the one hand, and Natural and Physical Science on the other. With the latter will appear the Meteorological registers as heretofore. These two divisions will be paged and indexed separately, forming respectively parts I. and II. of the volume for the year. They will also be issued in separate numbers, alternately or simultaneously, according to the number and character of the communications awaiting publication.

The price of the Journal to subscribers will be the same as heretofore. The subscription to the Proceedings will be, to members, (additional copies,) 3 rs. a number, or 2 Rs. 4 as. yearly, to non-members 4 as. a number or 3 Rs. yearly.

HENRY F. BLANFORD,
 W. L. HEELLY,
Joint Secretaries.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
EDITED BY
THE HONORARY SECRETARIES.



JANUARY to DECEMBER,
1869.



CALCUTTA:

PRINTED BY C. B. LEWIS, BAPTIST MISSION PRESS.

1869.

CONTENTS.



	<i>Page</i>
Members on the 31st December 1868, Appendix, in ry Proceedings,	I
Statement of Receipts and Disbursements for the 868, Appendix, in February Proceedings, ...	XVII
ngs for January, 1869, including Annual Report and ent's address,	1
„ February, 1869,	51
„ March, „	75
„ April, „	107
„ May, „	125
„ June, „	161
„ July, „	177*
„ August, „	199
„ September, „	223
„ October, „	245
„ December, „	263



LIST OF ILLUSTRATIONS.

- Map of the North-Eastern frontier of Bengal, shewing
J. Jenkins' route to the Hookong valley, vide p. 67.
Figures of coins of Antimachus Theos and Azilises.
I—IV. Figures of Burmese stone implements, vide p. 181.
Figures of pottery and beads found in a Cromlech at Coorg,
26.
I. Figures of agate beads from North-Western India, vide
II. Figures of a Rupee of Jahángír, vide p. 245.
267, Figure of Malwáh Goldmuhur.

mistake of the printer, the numbers 177 and 178 are repeated in



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JANUARY, 1869.

The Annual General Meeting of the Asiatic Society of Bengal was held on Wednesday the 20th January, 1869.

T. Oldham, Esq., LL. D., President, in the Chair.

The Secretary read the Council's report for the past year.

ANNUAL REPORT.

The Council of the Asiatic Society, in submitting their annual report for 1868, have the satisfaction of congratulating the Society on its continuing prosperity, both in respect to the increase of members, and the improved status of its finances.

The heavy debt, brought to the notice of the Society in the last Annual Report, has been materially decreased, while the actual expenditure during the past year exceeds the estimate, laid before the Society in January 1868, by a very small sum. The Council confidently hope that by adhering to the course of rigid economy, followed out during the past year, they will, in a short time, be able to free the Society from its debt, and recommend a more liberal outlay for its library and publications, than they felt justified in sanctioning in the past year.

During the year 1868, there has been an accession of 42 new members, while the Society lost 7 Ordinary members by death, two more than in the preceding year, and 20 by resignation, the same as in 1867. Thus the actual loss amounts to 27 members. Besides, the names of four members have been struck off the list. At the close of 1868, the total number of ordinary members was 427, of which 294 were paying, and 133 absent, members. At the close of 1867, the total number of members was 416, of which 307 were

paying, and 109 absent members. Thus while the total number of members during 1868 rose from 416 to 427, there has been a temporary decrease of paying members from 307 to 294.

The following is a tabular statement showing the fluctuation in the number of paying and absent members during the last ten years.

	<i>Paying.</i>	<i>Absent.</i>	<i>Total.</i>
1859	135	45	180
1860	195	47	242
1861	225	55	280
1862	229	82	311
1863	276	79	355
1864	288	92	380
1865	267	109	376
1866	293	94	387
1867	307	109	416
1868	294	133	427

Two members of the Society were in the past year elected Honorary Members, A. Grote Esq., the late President of the Society, and Dr. T. Thompson. To the list of Honorary Members, the names also of General A. Cunningham and Professor Bápudeva Sastri were added. Mr. F. H. Foucaux of Paris, and Professor Holmboe of Christiania were elected corresponding members of the Society. Of the ordinary members of the Society, the Council regret the decease of the Honorable Prosonno Coomar Thakur, C. S. I., Calcutta; the Honorable A. A. Roberts, C. B., C. S. I., Resident Hyderabad; Maulví Maulá Bakhsh, Khán Bahádur, Patna; Mr. H. D. Robertson, C. S., Saharunpore; Mr. C. B. Thornhill, C. S., Allahabad; Mr. S. Fenn, Attorney, Calcutta; and Mr. F. Hill, Professor of Civil Engineering, Calcutta.

MUSEUM.

At a special general meeting held in November last, formal sanction was given to the transfer, to the Trustees of the Indian Museum, of all the Society's collections, except those of books, coins, pictures and busts.

FINANCE.

The active measures taken in 1867 to diminish the expenditure of the Society were continued during last year. In the beginning

the Budget was very carefully discussed. A plan of expenditure for the whole year was laid out, and care was taken, not to exceed the amount sanctioned in the Budget.

INCOME.

	<i>Estimate.</i>	<i>Actual.</i>	<i>Deficit.</i>	<i>Excess.</i>
Subscription fees,.....	1,200	1,280	0	80
Donations,	8,400	9,771	0	1,371
.....	1,000	1,425	0	425
.....	350	479	0	129
Secretary's Office,.....	25	15	10	0
Printed,	25	36	0	11
Total,.....	11,000	13,006	10	2,016

EXPENDITURE.

	<i>Estimate.</i>	<i>Actual.</i>	<i>Saving.</i>	<i>Excess.</i>
.....	5,000	4,248	752	0
.....	2,150	2,830	0	680
Secretary's Office,.....	2,000	2,037	0	37
.....	1,000	1,136	0	136
Printed,	300	339	0	39
Books,	350	577	0	227
Catalogues,.....	200	18	182	0
Total,.....	11,000	11,185	934	1,119

The above statement shews that the actual expenditure for last year exceeded the estimate by a sum of Rs. 185. This excess, was sanctioned by the Council at the recommendation of the Finance Committee, to whom all questions of extra expenditure are referred. The actual income of the year on the other hand exceeded the estimate by Rs. 2006. This sum, together with a portion of the surplus of 1867, was appropriated to the payment of Printer's bills, and at the close of 1867 amounted to the enormous sum of Rs. 10,800. The cost of printing the Journal and Proceedings for the year 1867 mounted to Rs. 3800, which, added to the liabilities of the Society, made up a total of Rs. 10,800. The sum of Rs. 7,800 has been paid out of the above total, leaving a balance of Rs. 3,000. To pre-

vent the accumulation of debts, the Finance Committee have arranged to pay off within one month after presentation, all bills submitted for payment.

The following statement is an abstract of accounts of last year.

Admission Fees, ...Rs.	1,280	0	0	Contributions,.....Rs.	50	5	3
Contributions,	9,771	12	0	Journal,	7,807	8	9
Journal,	1,425	2	3	Library,	2,830	8	11
Secretary's Office, ...	15	2	0	Secretary's Office,.....	2,037	14	0
Library,	479	11	6	Vested Fund,	0	4	4
Vested Fund,	110	0	0	Coin Fund,	339	15	0
General Establishment,	1	11	3	Building,	1,136	8	9
Coin Fund,	36	0	0	Miscellaneous,	577	4	0
Museum,	280	0	0	Oriental Publ Fund,	856	0	0
Inefficient,	48	8	0	Messrs. W. & Norgate,	1,955	15	8
Oriental Publ. Fund,	489	12	0	Sir W. J.'s Monument,	680	0	0
Messrs. W. & Norgate,	2,132	11	8	Sundries,	196	11	9
Dr. J. Muir,	1,000	0	0				
Sundries,	226	8	6				
					18,468	15	11
	17,296	15	10				
Balance of 1867 ---				Balance---			
In the Bank of Bengal,	3,487	12	0	In the Bank of Bengal,	2,261	10	9
Cash in hand,.....	38	8	4	Cash in hand,	92	9	7
	3,526	4	5		2,354	4	7
Total,.....	20,823	4	3	Total,.....	20,823	4	3

The Council have much satisfaction to report that they have succeeded in reducing the heavy outstandings of last year, but by the loss of several members, outstandings to the amount of 400 Rs. are to be written off.

The following will shew the financial condition of the Society.

	Cash assets.	Outstanding.	Gross assets.	Liabilities
1868	4,354	8,523	12,877	5,683

The Council would urge on the members the imperative necessity of regularly paying their quarterly contributions, in order that the Society may meet its expenses for the coming year without being obliged to curtail its usefulness by any further retrenchments. The state of the library warrants a greater outlay than the present financial condition of the Society allows.

The following is their Budget for the coming year. The income has been estimated from the average income of the last few years. Any excess of income over the estimate will be, as in 1868, devoted to the payment of old debts.

INCOME.

	Rs.	As.	P.
mission fees,	1,200	0	0
contributions,	9,200	0	0
donations,	1,200	0	0
rent,	350	0	0
Fund,	50	0	0
<hr/>			
Total, Rs. ...	12,000	0	0
<hr/>			

EXPENDITURE.

	Rs.	As.	P.
donations,	5,000	0	0
rent,	3,200	0	0
Secretary's Office,	2,000	0	0
printing,	800	0	0
Fund	300	0	0
miscellaneous,	700	0	0
<hr/>			
Total, Rs. ...	12,000	0	0
<hr/>			

OFFICERS.

At the departure of Mr. A. Grote for England, Dr. J. Fayrer was elected Vice-President. Mr. H. F. Blanford, in the beginning of 1881, resigned the general secretaryship. Bábu Rajendralala Mitra, at some time, carried on the correspondence of the Society in addition to his own duties as Philological Secretary. In July last, the Council appointed Mr. H. Blochmann, General Secretary of the Society. A change also took place in the Natural History department, Mr. A. P. Colles being obliged, towards the end of May last, to leave Calcutta, Dr. F. Stoliczka took charge of his office. Mr. H. F. Blanford officiated as Treasurer during the temporary absence of Col. J. Gastrell.

Bábu Protapa Chundra Ghose, Assistant Secretary and Librarian, Bábu Money Lál Bysak, Assistant Librarian, have been active and assiduous in the performance of their duties, and the Council have pleasure in recording their satisfaction with their services.

The number of the Society's publications having largely increased, the Council, during last year, thought it necessary to appoint a store-keeper, who together with the Librarian has drawn up a correct list of the Society's stock.

JOURNAL.

The volume for 1868 is a little more bulky than that of 1867.

Of the first, or philological, part, 138 pages have been published in two numbers; and of the second, or the Natural History part, 218 pages and five plates, together with an index in four numbers.

Of the Proceedings, 302 pages have been published in twelve monthly numbers, together with the usual index. The Proceedings have also been illustrated by five plates.

The Journal and Proceedings thus extend over 658 pages, or 55 pages more than in 1867. In addition to this, there have been issued 216 pages of meteorological observations, and an Extra Natural History number of 88 pages, containing Mr. Theobald's Catalogue of Reptiles in the Museum, the printing of which had been commenced three years ago.

LIBRARY.

During last year, there were added to the Library 610 volumes, periodicals, and pamphlets.

COIN CABINET.

During the past year a batch of coins was purchased from a Bukhara dealer, containing many Phœnician and Muhammadan coins. The Committee also purchased a tetradrachma of Antimachas Theos, in good preservation, and another of Demetrius. The former was described in July's Proceedings.

BIBLIOTHECA INDICA.

The Persian Series of the Bibliotheca Indica has been carried on with great activity. Eighteen fasciculi of different historical works have been issued, as also the first fasciculus of an English translation of the *Áin i Akbarí* by Mr. Blochmann. The *Pádisháhnámah* by Abul Hamíd of Lahor, and the *'Álamgírnámah* by Muhammad Kázim have been completed by Maulvís Abdurrahím, Khádim Husain, and Abdul Hai, of the Calcutta Madrasah. The completing portion of Badáoní's *Muntakhab*, edited by Maulvi Ághá Ahmad 'Ali is shortly expected to be issued. Of the *Áin i Akbarí*, three fasciculi have

been edited by Mr. Blochmann. Of a new work, Kháfí Khán's *Muntakhabul lubáb*, Maulví Kabíruddín Ahmad has edited four fasciculi.

The Council have much pleasure in stating that their editions of the Muhammadan historians of India, according to the plan of the late Sir Henry Elliott, are thus rapidly approaching completion.

The progress of the Sanscrit Series of the Bibliotheca Indica was greatly interfered with by the death of several editors and the loss of MSS. Altogether six fasciculi have been issued. Measures have been taken to push on the publications during the ensuing year.

The following is a list of the several works published during the past year.

Sanscrit.

The Grihya Sutra of Aswaláyana, with the commentary of Gárgya Nárayána, edited by Anandachandra Vedántavagisa, Nos. 132, 143. Fasc. II and III.

Sankara Vijaya, or the life and polemics of Sankara Acharyya, by Ananda Giri, edited by Jayanáráyana Tarkapanchánana, Nos. 137, 138, Fasc. II and III.

The Mimansa Darsana with the commentary of Sávara Swámin, edited by Pandita Mohesachandra Nyáyaratna. No. 142, Fasc. IV.

The Taittiriya Aranyaka of the Black Yajur Veda with the commentary of Sáyanachárya, edited by Rájendralála Mitra, No. 144, Fasc. VI.

Persian.

The Muntakhab ut Tawárikh by Abdulqadir ibn i Mulúk Sháh i Badáoní. Edited by Maulví Aghá Ahmad' Alí, Vol. I. Nos. 131, 135, 136, 139, 140, Fasc. I to V.

Do. do. Vol. III. Nos. 145, 146, 152, 153, Fasc. I to IV.

The Pádisháhnámah by Abdul Hamíd Láhaurí, edited by Maulvís Kabíruddín Ahmad and Abdurrahím No. 133, Fasc. XVIII.

The A'lamgírnámah by Muhammad Kázim ibn i Muhammad Amín Munshí, edited by Maulvís Khádim Husain and Abdul Hai, No. 134, Fasc. XII.

The A'in i Akbarí by Abul Fazl i Mubárik i 'Allámí, edited by H. Blochmann, M. A., Nos. 120, 122, 141, Fasc. IV, V and VI.

Do. do. *English translation* by H. Blochmann, M. A. No. 149, Fasc. I.

The *Muntakhab al lubáb* by Kháfí Khán. Edited by Maulví Kabíruddín Ahmad. Nos. 147, 148, 150, 151, Vol. I. Fasc. I to IV.

It was proposed by Col. R. Strachey, and seconded by Col. Thuillier that the report be adopted.

The proposition was put to the vote, and carried unanimously.

The meeting then proceeded to elect the Council and Officers for the ensuing year.

It was proposed by the President and agreed to, that Mr. D. Waldie and Mr. W. T. Blanford be appointed Scrutineers of the ballot.

The President said that he had, with much regret, to announce to the meeting that their excellent Secretary Bábu Rajendralala Mitra was prevented from being present by serious illness. This illness was the result of his exposure in the malarious jungles of Orissa, during his recent antiquarian tour in that province; he (the President) had communicated with Bábu Rajendralala, with reference to the arrangements for conducting the philological portion of the Society's labours during the coming year, and the other claims which were certain to be made on his time. And Bábu Rajendralala in his reply states, that 'he would not, under any circumstances, be able to resume work for six weeks to come, that the first claim on his time would be the preparation of a report of his late unfortunate tour, for which he had materials which would fill some 400 pages 4to., and then there was also the preparation of the proposed Catalogue of Sanskrit works, required for Government which should be got up in a manner worthy the name of our good old Society.' He adds; "to do these works properly, I shall have to devote all my leisure hours to them, and under the circumstances, I must resign the Secretaryship."

It was with great regret that the President announced this resignation, and he felt sure that the Society would join with him in a very hearty expression of the obligations they were under to Bábu Rajendralala Mitra for his constant devotion to their service, and for the able and independent way in which he had ever conducted the duties of the several offices he had held under the Society. He felt that

It would be unnecessary to put this more formally but that it would be seconded by the meeting at large.—Passed with acclamation.

It was also proposed by Col. Thuillier and seconded by Dr. Stoliczka, that Mr. F. Peterson and Mr. R. D. Stewart be requested to audit the accounts of the Society.

The proposition was put to the vote and carried unanimously.

During the time that the ballot was proceeded with, the President brought to the notice of the meeting the new code of rules, as proposed by the Council. The President said—that it would be in the recollection of the members, that, for years past, there had been very frequent changes made in the Bye-laws of the Society. These alterations were generally brought up individually, and thus were frequently considered without a full investigation of their bearing on other parts of the rules. The whole series had thus become, in several respects, contradictory and inconsistent. Many years since, a Committee of the Council had been appointed to revise these rules generally and submit a new set. This Committee had met several times, and had made some little progress with the task entrusted to them, when the departure from Calcutta of some of its members led to a cessation of its labours; and nothing further was then done. The attention of the Council had been more forcibly directed to the necessity for a general revision of the laws during the last year, by the fact that the supply of the rules, of which each new member is by the laws to receive a copy, had become exhausted, and it was necessary to reprint. A Committee therefore had been nominated, consisting in part of members of the Council of the Society, in part of other members not in the Council, to whom the whole question was referred. This Committee met frequently, and very fully, and in great detail, discussed all the rules; consulted the rules of other Societies to see in what their experience might aid, and after long and frequent deliberations they submitted to the Council the series of rules proposed by them. These rules were then gone over, seriatim, by the Council, and considerable alterations in arrangement, in wording, and in a few cases in principle, were introduced.

The rules as thus agreed to by the Council were then printed and brought before the Society at large. A copy of these rules had been sent to every member, whether resident or non-resident, with a request

that they would consider the provisions, and would either send their votes, or, as usual, attend this meeting for the discussion of the rules. From the non-resident members a large number of voting papers have been received, all, with very trivial exceptions, being in favour of the rules as proposed. These exceptions he would bring before the meeting in due course.

He mentioned these facts, shewing the care with which the rules had been drawn up and discussed, not as, in the slightest degree wishing to restrict discussion on them now,—he trusted the Members of the Society would give to them as full and detailed consideration as the Committee and Council had,—but merely to express a hope that no trivial or merely verbal alteration would be urged which, without at all affecting the principles involved in the rules, would still necessitate the sending back such alterations for the consideration of the mofussil members. He did not anticipate that the rules were perfect, or that objections would not arise, but he hoped, that unless these objections appeared important, the rules might be allowed to pass, so that the Council might have them printed off, and circulated to the members.

With these few preliminary remarks he would now go through the rules seriatim, and with the permission of the meeting he would propose to take them in sections, as they were arranged in the copies before the members, noting as he went along the several alterations which had been introduced, and any alterations which have been suggested.

Rule 1 was then adopted.

In Rule 2, clause (a), it had been proposed by one mofussil member that the word thirty be changed to ten. It was stated that members residing within ten miles might be considered as able to take advantage of the privileges of resident members to attend the meetings &c.—but that those resident at a greater distance scarcely could. The alteration was put to the meeting, and rejected.

Rule 2, was then put, as proposed by the Council, and carried.

Rules 3, 4, 5 and 6, were then put and carried.

Rules 7 and 8, were also put to the vote, and carried.

In rule 9 clause (b) the President stated that it was proposed by one member that the subscription for *non-resident* ordinary members should be 10 Rs. per annum. Several members expressed an opinion that the

subscription generally might be reduced. It was explained, that the amount proposed would not actually cover the cost of the publications given to the members, with the present numbers. It was then put to the meeting — that the words 6 Rs. per quarter shall be changed to 10 Rs. per annum in Rule 9 clause (b). This resolution was negatived.

Rules 9, 10, 11, 12 were then put to the meeting and carried.

Rules 13, 14, 15, 16, 17, 18 were then put to the meeting and carried.

On putting to the meeting Rule 20, it was moved by Mr. W. Blanford, and seconded by Dr. Smith that this rule be omitted. After some discussion, as it appeared that the rule would not cause any change for twelve months, which would allow ample time for deliberate consideration of the principle involved, the resolution was put to the meeting and negatived.

It was then moved by Dr. Fayrer and seconded by Mr. Reinhold, that the remainder of the rules be adopted without further discussion. Several members thought it desirable that opportunity should be afforded for the consideration and discussion of the rules in detail. The resolution being put to the meeting, was negatived.

Rules 19, 20, 21, 22, 23, 24, 25 and 26 were then put to the meeting and adopted.

Rules 27, 28, 29, 30 and 31, were then put to the meeting and adopted.

Rules 32 and 33, were in like manner adopted.

Rules 34 and 35, were then put to the meeting and adopted.

Rules 36, 37, 38, 39, 40, 41 and 42 were then put to the meeting and adopted.

The President then moved, that in Rule 43, the date of the present meeting be inserted as the date from which these rules should have effect. — Carried.

The President then moved, that the Rules as now passed seriatim be the Rules of the Asiatic Society of Bengal : which was carried.

The President thanked the meeting for the patience with which they had gone through these Rules in detail.

The ballot having been taken, the Scrutineers announced that the following gentlemen had been elected to serve as Members of Council and Officers for the ensuing year.

Dr. J. Ewart.

Col. H. Hyde.

Bábu Devendra Mullicka.

The Hon'ble J. P. Norman.

Dr. S. B. Partridge.

Bábu Rajendralála Mitra.

Col. J. E. Gastrell,

Dr. F. Stoliczka,

H. Blochmann, Esq.,

} *Treasurer and Secretaries.*

The President then read the following address.

PRESIDENT'S ADDRESS.

GENTLEMEN,—The close of another year naturally suggests to those interested in the welfare of our Society a brief review of the labours in which we have been engaged during that time. The recurrence of such Anniversaries affords also a fitting opportunity of resting for a while from the constant strain of current work, and calmly recalling the past, endeavouring to extract from such a retrospect a just conception of what our progress, if any, has been; what our failures, and there are certain to have been some, have resulted from; what our hopes of future success may be. We shall thus be the better prepared to enter on the duties of the coming year; and the better able to face the difficulties we are sure to meet, if we know what is their nature, and what their limits are.

It had been my intention to have taken, on this occasion, a general review of the progress of knowledge in those departments of enquiry, to which the Society has more especially devoted itself during the year now closed; to have seen, how far this Society had contributed to that progress, if at all; how far we were lagging behind in the onward race, and to have enquired also how far, and in what way, it might be practicable to encourage the efforts of our members, to evoke their more zealous exertions, and to facilitate their success. But having held the chair of your Society for only a part of the year, and seeing also that the several contributions to our meetings must all be fresh in the memory of the Members, I think it will be scarcely necessary or desirable to attempt a summary review of the papers which have been read. These will be quite as well known to those interested in such enquiries, as they are to myself. And they are perhaps too recent to admit of a just estimate being formed of their true bearing on the general progress of knowledge. The regular, and rapid issue of the Proceedings of the Society, in which are full reports of the several meetings held during the year, absolves your President largely from the duty incumbent on him of recalling your labours. On the other hand, as now one of the older members of this Society, and as one who from the first year of being in this country,

has never ceased to take a deep interest in its welfare and success, I hope I may be permitted without presumption to take a cursory view of the changes which have taken place in the constitution of our body, and of those which must be anticipated; and I would fain hope that such a review will not be without interest and value.

The report of the Council read to you this evening will have made you acquainted with the numerical condition of our Member list at present. It shews that we have on our rolls now 427 Members of whom 294 are in India, while the large number of 133 represents those away from this country. It will be seen also, on comparing these numbers with those of former years, that there has been a large increase in the number of these absent members, to some extent due to more liberal rules for leave, sanctioned during the year, so that, while we had an addition during the year of 42 new members,—and the total number of members now on the list is larger than it has ever been—there has been actually a diminution in the number of paying members of 11. Hitherto it has been the practice to retain on the Member-roll, the names of those who had been members, but who had left India. Very many of these never had any intention of returning to this country. And the retention of their names in the list largely tended to give to the Society an apparent strength which it in reality did not possess. Such absent members have not been in any way contributing members, and have therefore not added to the support of the Society. The new rules this evening sanctioned will I trust tend to reform this. They provide that any person, who has been a member, can on leaving this country secure to himself, during his absence, the publications of the Society by payment of 12 rupees per annum, and can resume his membership rights on his return; while the names of such as leave the country, and do not within three years from the date of leaving express their wish to continue members, shall be, after the lapse of that time, struck off the rolls. It is hoped, that in this way, the managing body of your Society will be able to know with a much nearer approximation to accuracy, than can now be attained, the real amount of income and support to be derived from the members. The anomaly of continuing on our rolls the names of many, who have ceased to be in any way connected even with India, will be removed, while every encouragement is at the

same time held out to induce others to maintain a real, and I may add a profitable, association with the Society.

I have said that the number now on the rolls is larger than at any previous period of the Society's existence. And in so far as this is the case, we may, I think, fairly congratulate ourselves on the fact. Undoubtedly this has been largely brought about by the wise measure of reducing the amount of the annual contributions required from members, which, long anxiously and earnestly urged upon the Council, was at last sanctioned in 1859; since that time the number of members has increased from 180 to 427. It seems to me that we might, with great wisdom go further still in the same direction. Looking either to the value of the publications of the Society (the only return which non-resident members receive for their contributions), or the amount of subscription demanded from members of similar Societies in Europe, and the comparatively greater advantages which members of such Societies enjoy, I think the Asiatic Society of Bengal would do wisely to reduce still farther the monthly contributions from its members.

But while congratulating you on this increase of number, there seems to me another and a more important point of view, from which to study the numerical results given in the Council's report. Gentlemen, the Asiatic Society of Bengal is to this day, I may say, the only Society in this portion of the Indian Empire, specially devoted to the cultivation of pure science. Its publications, extend in an unbroken series over more than eighty years. Devoted to Oriental Literature, Science, Antiquities, Geography and Art, they form a repertory of the most valuable and curious information on every subject connected with this Empire, and are, as I believe, one of the grandest monuments of British dominion, and one of the noblest proofs of British intelligence in the East. Without them, no student can satisfactorily investigate the learning, the languages, the history of this empire. They contain the life-long labours of some of the greatest discoverers in, and some of the noblest contributors to, Oriental knowledge. The Society is still vigorously pursuing the same course. And yet among the many thousands of educated Europeans in this country, and the many thousands also of well informed Native gentlemen, this, the chief and almost the only scientific Society in this part of the Empire, counts its supporters and contributors by only a few hundreds!

There must be good and sufficient reasons for this, and it is worthy of careful enquiry to ascertain, if possible, what these may be.

Again, during the past year, the Society has lost by retirement no less than 20 members; during the preceding year, 20; in 1866, 19; in 1865, 25. I confess I always listen to these announcements of retirement with great pain, accompanied by a guilty consciousness of having myself, as an individual element in the management of the Society, contributed to the result. I think it may be assumed as a fact, that no one will willingly abandon a position which he considers to be advantageous. There have doubtless been frequently private or pecuniary reasons for such; but in by far the majority of cases, I fear we cannot admit that these have been the cause of the numerous retirements. And we must, I am convinced, seek for a more deeply seated, a more vital reason, and admit that the faults are to a large extent internal in the Society. Have we done what in us lay to render the fact of association with us an advantage to the members themselves? I would not for a moment desire to overlook the consideration, that many join the Society from a desire to promote its efforts and advance its researches, without seeking any individual advantage. We gladly acknowledge that there are many such. But unquestionably the majority of our members do, on joining this, or any other Society, look forward to receiving some advantage in return for their contributions, and do calculate also whether these advantages are worth their cost. Now what advantages of this kind do we offer to our Members? All obtain the Journal and other publications of the Society, resident members have also the opportunity of being present at the meetings of the Society, and of freely borrowing books from the library.

First then as to our Journal. I have no scruples in confessing, although I do so with very great regret, that its appearance has been for many years past too irregular, too unpunctual, and uncertain, to enable members even to know whether they would ever receive it or not. Numbers of one year issued late in the succeeding year; others issued without the plates referred to in them, which plates have appeared in some subsequent year's publication; these, gentlemen, have, I am ashamed to say, been the rule rather than the exception. Would any of us continue our subscription to a periodical issued in this

unsatisfactory way? And are we justified in expecting that our Journal will be appreciated, if such be continued? But beyond this, the contributors to the Journal themselves never knew when their papers would appear; there often was no rule observed as to priority of contribution, giving a claim to priority of publication. The practice had grown up of merely announcing to the meetings of the Society the receipt of papers, of which only the titles were given, and nothing more was heard of them, until they appeared in the Journal, perhaps years afterwards, or were possibly returned to their authors. During the past year I rejoice to be able to announce to you that by the strenuous exertions of your Secretaries, much has been done to remedy these defects. No one here can be more painfully or practically aware of the immense difficulty of providing for the punctual appearance of the Journal and Proceedings, than I am myself. These difficulties are the greater, because the result depends not on the efforts of an individual but on those of many: the printer, the artist, the lithographer, &c.; delays may arise from each and all of these, and in addition there are climatal difficulties which can scarcely be foreseen, and sometimes even, if foreseen, can scarcely be guarded against. But while admitting all these, we felt the delay was not insurmountable, and determined not again to ask the Society to believe it unavoidable. Since I have had the honour of taking the chair, the Proceedings have always been issued to you before the ensuing meeting, the illustrations have always accompanied the paper to which they referred, and the completion of the volume for the year, with title and index, was in your hands, before the close of December. This volume is larger, and has more illustrations than preceding ones. The numbers of the Journal have also all appeared; of the first Part, two completing the issue for the past year, and of the Physical Science Part, four numbers with index, contents, title, &c., have all been issued before the close of the year, although the first number had only been commenced in March. An extra number was also issued containing Mr. Theobald's Catalogue of Reptiles, which had been actually in the press for three years; and meteorological Reports were published, extending over a period of nearly two years.

Further, there has not been a single paper of any kind submitted to the Society for publication, which has not either been read in full,

or of which an abstract has not been given, at the meetings, and in all cases the opportunity at least for free discussion of those papers has been given, and such discussion invited. This I consider of high importance, as one of the great advantages of such an association arises from the opportunity its meetings afford of eliciting the views of its members on the subjects brought forward, and thus generating the glow of intellectual enjoyment and intellectual success, by the friction of mind against mind. This advantage is entirely lost when papers are merely laid on the table. At the same time it was found that there remained over several papers, the printing of which had been ordered long before, but which had been laid aside for the publication of others possessing more immediate interest. These have now been all printed in your Journal and, as nearly as the size of the several numbers of the Journal would admit, in the order of succession of their dates of submission to the Society. And now I have the pleasure of telling you that the first number of the Journal, Part II, for the present year 1869, has this evening been placed upon the table, by your Natural history Secretary. This brings up the publication of papers read to the Society to June last; that is to within six months of the date of issue. Gentlemen, I consider this most highly satisfactory, and we owe much to Dr. Stoliczka for the zeal and devotion he has shewn in bringing about this most desirable change. We hope that the same system will be maintained; that, as far as the funds of the Society admit, all papers, excepting under peculiar circumstances, and by special order of the Council, shall be published in the order of the date of submission, and without any repetition of delays, which have been thus shewn to be avoidable.

The Proceedings of the Society again under this system have been really what they assume to be, and the volume for last year, a goodly sized volume of more than three hundred pages, contains much that is valuable and highly interesting; and will, I feel certain, bear very favourable comparison with the records of proceedings of any other similar institution, as giving evidence of healthy vigour and active progress in the life of the Society.

So far I have spoken of the publications of the Society. The other advantage we offer to our members, in return for their contributions is the Library. And with reference to this, I am much pained to say,

that it has not been in our power to do as much as we could have wished. The Council have been fully impressed with the vast importance of this portion of the Society's efforts, but the absolute necessity of pursuing a system of the very strictest economy has prevented the outlay of a single rupee that could be avoided. The allotment of money sanctioned out of the income of the Society at the commencement of the year has been very slightly exceeded (under sanction of the Finance Committee and Council), but there was much, very much, that we desired to do, very much that we were anxious to add to our library but could not. For the coming year, the Council suggests an allotment of money somewhat larger than that of last year and, I hope, that a good deal may be done to supply deficiencies, and to add to our stock of books. I trust also that the close of the year may not again come round, without some progress being made, in what is so seriously required, a new catalogue of our Library &c.

But if we cannot claim that the Members of our Society receive a full and fair equivalent for their contributions, I would suggest to the Members to consider how far this may be due to themselves, as well as to the managing body of the Society, and how far they have it in their own hands to remove this cause of complaint. And first, I would ask the authors of papers to bear in mind the costliness of illustrations, and the tediousness and delay in their preparation; and to reduce these, therefore, to the minimum extent, sufficient for the just elucidation of their arguments, or descriptions. And I would also ask them to diminish, if possible, the demands on the time of our officers, by always submitting with their papers an abstract, embracing the principal points referred to or discussed, and giving a general view of the argument of the writer. No one can prepare such abstracts so effectively as the authors themselves, and this is the only way in which a certainty of nothing being overlooked can be attained.

And to the Members, who are not contributors to our Journal, I would say, that they must be aware that such carefully illustrated publications cannot be issued, without considerable cost. I would appeal to them to save their executive officers, who thus voluntarily devote much time and labour to their service, without any remuneration other than the consciousness of doing their duty, from the harassing and wearying necessities of considering carefully, how every expenditure may

be reduced to a minimum, how this can be cut down, and that left out, or even to decide whether it be possible to publish at all. At the commencement of my tenure of office, it was very seriously discussed, whether it would not be necessary to suspend the publication of your Journal entirely for a time. And you are, gentlemen, indebted to the liberality of your officers for several of the plates which illustrate your publications, during the past year, which the funds of the Society could not have afforded. This is not as it ought to be : and I would throw myself on the feeling of justice and honour of the members, and ask them to prevent a repetition of it. There was at the commencement of the year, a total amount due from different members to the Society, very nearly equal to a whole year's income ! Strenuous exertions have been made to call in these sums, but with only very partial success. We have reduced the amount by only about $\frac{1}{8}$ th of the whole. I would ask your aid in this matter. Letter-applications have been made repeatedly to all who are thus indebted to the Society, but believing that such have frequently miscarried, or been overlooked in the pressure of other business, the Council have resolved to print now and send to all the members of the Society, a list of the names and of the amounts due ; and we hope that the attention of the members may thus be drawn more effectively to the facts.

Gentlemen, if the Society could now realize the amount due to it from its members, not only would all existing debt be at once removed, but we could add considerably to our actual and permanent income ; we could greatly enlarge the Journal, and improve our library, and could thus greatly extend the advantages which we offer to our associates. In connexion with this question of income and expenditure, I may announce to you that, with the hearty co-operation of the Finance Committee of your body, a new system has been introduced of calling in all bills, and discharging them, monthly. You will see in the accounts an item of income derived from the savings thus effected by the payment of cash for work done. But the main advantage resulting from this system is, that the Council know exactly from month to month, how the affairs of the Society stand, and can at once prevent any accumulation of liabilities. The necessity for such a step will be obvious, if I mention that on urgently calling for the immediate submission of all outstanding accounts, several were produced, which

dated even five years back, and which had been allowed to stand over, never having been submitted even though asked for.

It depends, therefore, entirely on the members themselves, how far their advantages as members, can be increased. The Executive of the Society have done what in them lay to promote their interests.

In connection with the question of the publications of the Society, I should fail in my duty did I not make known to the Society, that I have had several, I might say numerous, appeals from members of the Society, to induce a reversion to the old system of publishing all papers, no matter what their subject, in the same number of the Journal, doing away with the division into two series, as now, a change first introduced in 1865 on the motion of Lt. Beavan. On the other hand, other members are equally strenuous in urging the continuance of the present system. I think much may be urged on both sides. And were I content to anticipate only a continuance of the present extremely limited amount of funds at the disposal of the Council, for such publications, I would decidedly urge the abandonment of this division of the Journal. I think we must confess, that the conditions of the case are quite changed since first the Journal was issued. The facilities of communication with Europe and America have been immeasurably extended; Societies have multiplied at home; and there is now, no difficulty whatever for any one to find a fitting medium of publication for any researches he may undertake, the record of which is worthy of being published. A large and special audience is thus at once insured; and delay in making known his results avoided. We cannot now, therefore, look forward to our Journal being, as it has been in past years, the record of the life-long labours of any member. Even the most zealous contributors to its pages find it desirable to send to Societies at home their most valuable papers. And it is consequently difficult to maintain the high character of the Journal, and the fitting publication in two distinct series of the year's contributions. During the year just closed, only two numbers of Part I have been issued; simply because there were no more papers to be printed; while it may, I think, fairly be urged at the same time that the Physical Science papers, in Part II, would have been in no way injured or diminished in value, by the appearance, in the same number, of the oriental papers. The attempt to form two

distinct volumes for each year has failed, because there has not been material enough, or funds enough, to produce two volumes, and each series has, I think, lost in general interest by being isolated. Moreover the Proceedings now absorb all the smaller papers which are of interest, while the issue separately of all these parts, numbers, and volumes adds to the cost.

My own opinion, therefore is, that if we are to have only a continuance of the present state of things, it would be wiser to revert to the old system of publication of all papers in one series, issuing the numbers of that series at regular intervals, of say two months. But if, on the other hand, as I think we are justified in anticipating, we do receive such an accession of strength, as will place the funds at the disposal of the Society, for such publications on a much more satisfactory footing; then, I believe the Council would be able to secure the fitting publication of sufficient material in both series to form two concurrent volumes. In this case, the division would be advantageous. In this matter also, the decision entirely rests with the members of the Society at large. A reference to the accounts of the Society will shew you, that the Council have been fully alive to the importance of improving and enlarging your Journal and Proceedings. They have steadily increased the allotment to such purposes out of the general funds of the Society, so far as was consistent with the other demands on these funds. If you go back only a few years you will see that in 1864, the allotment for publications was only 3,500 Rs.; this was also the amount in 1865; in 1866, this sum was increased to 4,400 Rs.; and in 1867, and 1868, to 5,000 Rs. This is very nearly one-half of the whole income of the Society. And I would also ask you to remember the fact, that were that income doubled, there would be very little increase in the cost of establishments for management: and that more than a half of that increase would be available for the extension and improvement of your publications. Cannot this be accomplished? Are we to sit down in despair of seeing our finances in a more flourishing state? Are we to be content to see the most valuable papers seek for publication elsewhere, because we are unable to pay for their illustrations here? I would appeal to my fellow members of the Society, and ask them to aid their Council in this respect. I

will not believe that you look upon the efforts of the Society as a mere pastime, that you come here for the idle purpose of passing an hour, or of merely gratifying intellectual curiosity, however laudable such might be. I would rather be convinced that you feel, that by the very act of enrolling yourselves on the list of this, or any other institution for the promotion of science, you accept the position of joint trustees for the great treasury of truth, and are in all honour bound to see that the talents thus committed to your charge receive no diminution, but rather bear fruitful increase, at your hand. If then, each member of the Society, would but induce one single new member to join—and surely it is not assuming too much, that one at least in the acquaintance of every one of us, would take an interest in our pursuits,—I say, if each member of the Society added only one to our lists, and thus doubled our numbers, the difficulties under which we now labour would disappear, the utility of the Society would be largely increased, and the circle of its influence might be still further widened, by reducing the amount of contributions demanded from each of its members.

During the year just closed, the Society at large has unanimously sanctioned the formal transfer of its collections of Natural History, Antiquities, and of miscellaneous objects, to the Trustees of the Indian Museum, incorporated under Act XVII of 1866, to be by them held in trust, for the Society, to form part of a general Museum, freely accessible to all, and to be located in a building specially erected for this object. This building, as the members of the Society are aware, is now in progress. It is situated in the very best locality in Calcutta, facing the large open maidan; it will be large, roomy, and we trust admirably adapted for the purposes for which it has been intended. Pending the completion of this building, the collections still remain in the rooms of the Society, and in a house in an adjoining street, rented to provide the necessary additional accommodation. Full lists of those collections have also been prepared by the zealous exertion of two of our members, Dr. Stoliczka and Mr. V. Ball, who acted as Curators of the Indian Museum during the absence of Dr. John Anderson with the expedition to Yunan. And the Council are now therefore authorized and prepared finally to

hand over the collections to the trust-charge of the ' Trustees of the Indian Museum.'

This transfer of our collections to an institution, where they are certain to be fully cared for and properly exhibited, is, I believe, the most important change which has affected the Asiatic Society for the last half century. It was not, until after much deliberation, that the Asiatic Society of Bengal ever commenced the formation of a Museum. There were strong and weighty reasons urged against the advisability of that course, derived from the experience of several associations elsewhere. The unavoidable increase in the cost of maintaining such collections was urged; the inability of any limited Society to meet this, or even to provide accommodation for such collections if formed; the terrible waste and destruction of objects of Natural History in this climate; all these difficulties were considered. And in the face of all, it was still determined to commence a Museum. In the wisdom of that determination, under the circumstances, I entirely concur. There was at that time in this city no collection whatever available for the students. Individuals who were interested in special branches of enquiry, had provided themselves, at great cost, with series such as were required for their own immediate researches. But these were, of course, not accessible to the public, or to other students. Now, for the success of this Society, it was absolutely essential that such collections should exist, and most wisely, therefore, did the members devote their energies to the formation of a Museum. For years, unaided by public contributions, steady progress was made. But the truth of the warnings they had received soon made itself manifest. So long since as 1837,—a whole generation since,—it was seriously discussed whether the attempt should not be abandoned. In the following year, it was agreed that either the Museum should be given up, or the publications of the Society. An earnest appeal was then made to the Government of the day for aid. A grant of 200 Rupees per month was sanctioned, and the collections were saved. At various times subsequently the amount of the grant was increased, and effort after effort was made to bring the collections into better order and arrangement. The Society made constant sacrifices to obtain proper means for their exhibition and preservation. But the demands still increased. Mr. Blyth was appointed Curator towards

the end of 1841, and at once the Zoological department of your collections began to assume an importance and value which they had no claim to before. From the time of his appointment, until, in 1862, broken health compelled him to seek a more favourable climate, your Journal bears continuous testimony to the wide range of his knowledge, to the carefulness of his labours, and to the enthusiasm and devotion he brought to his studies. In truth, I know of no series of papers, the contribution of one man, which have tended so largely and so thoroughly to illustrate the fauna of any one country as those of Mr. Blyth do that of India. Mr. Piddington also had for many years contributed largely to our knowledge of the resources of this country, and continued in charge of the Mineralogical and Geological portions of your collections, until in 1856 the establishment of a systematic Geological Survey of the country, and the necessity of providing a depository for its collections, which the Society could not give, led to the founding, in a separate establishment, of the Geological Museum.

But, notwithstanding the liberal contributions of the Government, it was still found that the Museum was a source of constant expenditure, which the limited resources of the Society could not meet, and of constant anxiety. If care were given to one division of the collections, all others were necessarily neglected ; no sufficient staff could be maintained ; no sufficient space could be afforded. And if additions were made in one direction, they could only be accommodated by the exclusion of some other class. It was not, therefore, surprising to find serious complaints frequently urged of the way in which valuable collections had been treated. In fact, such was inevitable ; we had neither the room nor the funds required for the greatly increased collections. After much discussion and careful deliberation, it was determined to appeal to the State, to establish a proper and efficient Museum chiefly illustrative of the Natural History resources of India. Some time elapsed, many difficulties intervened ; the disturbed state of the country ; the pressing demands on the public revenues for other objects ; the changes in the *personnel* of the Government ; all tended to delay the final decision of the question. But the Society was gratified in 1862, by the announcement that “ in the opinion “ of the Governor-General in Council, the time had arrived when

of this will be, a large withdrawal of support from individuals. Indeed, I found it very difficult to persuade a member of the Society the other day that this was not the case *now*, and to induce him to continue his contributions. I confess I anticipate this result with some dread, and I would seek to avert the evil. The case would be different if the proposition were to construct a separate abode for the Asiatic Society, which could be specially adapted to their wants. But this is not the case: the proposition is, that the Society should take up its abode in a corner of a great building designed for other purposes, in rooms that beyond a question will soon be needed for other purposes. I venture to think, that the Society would be vastly more benefited if a pecuniary equivalent for the proposed rooms were secured to them, and they continued in their present abode. There is, however, ample time for the consideration of this question, as the move cannot be made for some years yet.

You will, gentlemen, have heard with regret of the loss of seven of our members during the past twelve months by death. Of those seven, one only, Mr. Foster Hill, had been a contributor to our meetings. Mr. Hill joined the Society soon after his arrival in this country to take up the important duties of Professor of Civil Engineering in Calcutta, and we looked forward with much hope to his increasing interest in our common pursuits. Of the others, whose decease has been announced to you, some had filled prominent positions, as citizens and rulers in the land, with high honour and credit; one especially, Prosonno Coomar Thakur, we would name as having long and earnestly shewn his appreciation of the value of knowledge by actively engaging "in the holy cause of enlightening his countrymen;" but this is scarcely the place to consider their history in such a light. As members of the Asiatic Society, they had not been contributors to our Journal, but they had for many years proved by their constant membership, that they appreciated the importance of science, and were impressed with a sense of that duty which devolves on the wealthy to maintain and support, by their wealth and by the sanction which their names and public station give, those means of co-operation, by which the progress of the real labourers in science is facilitated. In this they had offered an example worthy of imitation to a wider extent than it has hitherto claimed.

There are hundreds who from various causes, can assist and support science in no other way than by their purse; but I would urge that this aid is a duty; a duty, even enhanced by self-interest, which will certainly not lose its reward. How forcibly and yet how quaintly Bacon says "Knowledge is not a couch for the curious spirit, nor a terrace for the wandering, nor a tower of state, for the proud mind, nor a vantage ground for the haughty, nor a shop for profit and sale, but a storehouse for the glory of God, and the endowment of mankind." I know that the standard of mental culture among the educated classes in this country, whether European or Native, is too high, to allow me for a moment to think that they are insensible to these claims of science on their support. I would rather suppose that these claims have not as yet forced themselves on their notice. I would not degrade knowledge by making it "a shop for profit and sale," in asking the consideration of the individual gains to be acquired by its patronage, but I would recall to you, that science has ever been the most powerful minister of national power, the most effective guide to national wealth, "the true handmaid of religion, the one manifesting the will the other the power of God," and I would urge that the neglect to encourage and sustain this, and such other kindred institutions, is the neglect of a duty which we owe to ourselves, to our successors, to our country. It is mainly, gentlemen, by the combined efforts of such Societies, by the co-operation of their members, by the increased interest which attaches to common studies pursued with a common object, by the minor intellectual contests which arise from the challenge of mind to mind in the working of such institutions, that the soldiers of science are trained in the use of their weapons, and enabled to go forth, clad in the panoply of scientific truth, as loyal knights to do battle with the terrors of superstition and to scatter the hosts of ignorance.

We have all, gentlemen, other and more pressing claims on our time; other and onerous duties to perform. Rarely indeed has it happened, that science has been able to obtain the undivided attention and time of any of her cultivators, but we can contribute, each according to his own ability. There is not one, if he be only willing and humble enough to attempt it in the right spirit,—letting his "mind, like a pure mirror, reflect nature without distortion"—who cannot

add something to the pile of knowledge; who cannot pick up a branch here and there; a dry twig from the trees around. Others perhaps will tie these into faggots, and add them to the pile (and the lowest menials in the service of science can aid in this) and at last some other devout worshipper will come, and touching the heap with a spark of Promethean fire, will call forth all the secret light and heat it contains, to illumine the temple of knowledge. It is only thus by the useful combination of many, that true progress is obtained, and even had our Society not existed, we should have been compelled in other ways to unite the efforts of many, before we could arrive at the solution of our problems.

It was, gentlemen, with convictions of this kind, that extended education, and the general diffusion of science, more especially as applied to the industrial arts, were among the most effective means by which the social condition of this country could be improved; that by encouraging the cultivation of the natural or inductive sciences, it was possible to exalt the tastes of the educated youth of this land; that I was led to consider how far it might not be possible for this Society, through its Council, to aid in facilitating the attainment of this desirable end. In the valuable address delivered from this chair, at the close of the previous year, your President, Dr. Fayer, remarked on the serious discouragement with which these studies had been met in this country. He truly said: "If ever we propose to educate the people thoroughly, to lead them from lower to higher truths, it can only be by making them acquainted with the subjects included under the comprehensive term of 'Physical Science' * * * by imbuing them with a comprehension of those general laws by which all physical phenomena are regulated." He went on to say, "It is not here, though, that the elementary knowledge could be imparted, but in the schools where the youthful mind is trained to observation and comprehension of laws, the results of whose operations are recorded and verified here." Entirely agreeing as I did in these views and in the opinion that this was a subject worthy of the consideration of the Society, I lost no time, on taking your chair, in urging the Council to aid in this good cause. I am happy to say, the proposition met with their earnest support. A committee was selected, and entrusted with

the discussion of the best means of bringing the matter to the favorable consideration of the authorities who would have to carry out any proposed changes; and also to consider what, and how great, those changes should be, in order to ensure the successful attainment of the object. The question was fully discussed, and it was decided to address His Excellency the Governor-General, in the matter. As Patron of this Society, and at the same time Chancellor of the University of Calcutta, we felt confident of the interest which His Excellency would take in the question. And, as to the means which appeared to us the best adapted to accomplish the end in view, we were quite agreed, that any change must be gradually introduced, since the agency by which these subjects could be taught must in this country be to a large extent created, before there could be any very large extension of such studies. And seeing, not only in this country but in Great Britain, that the Universities were the great object of ambition with all the better class of students, and that the curriculum of studies in the vast majority of Schools was almost entirely regulated by a reference to the University standards,—even when the large majority of the school pupils never intended to proceed to the higher grade of an University training,—we have urged the very simple addition of an elementary knowledge of Natural or Physical Science to the course required from every candidate for matriculation in the University of Calcutta. We were satisfied that if this were demanded, and rendered obligatory with the pupils, the information would be acquired; that the earlier students would soon become themselves better qualified to teach others; and that thus gradually, but most surely, a large amount of knowledge would be disseminated, the good effects of which we did not venture to doubt. In this spirit, we addressed His Excellency, and we have since been informed, that His Excellency has laid the question officially before his Council, where, we doubt not, it will receive full and just consideration.

I conceive that this has been a most legitimate exercise of the influence which the Asiatic Society ought to possess; and I trust the effect may be as beneficial as we anticipate. And indirectly, I trust also, it may be of essential advantage to the Society itself, in bringing into our ranks, a large number of new recruits, ready to take up arms in the cause of truth. But let us not forget at the same time

that while we urge upon others the necessity of such extended education,—if our youth are to be trained up as useful citizens and men,—let us not forget, I say, that our Society itself forms the necessary complement to this early training, let us view ourselves even more than we have been wont to do as an educational body, and as devoted as much to the improvement of others as to the advancement of our own information. Let us all be fellow-labourers in the great search after truth, fellow-pupils in the school of nature, fellow-students of that “great first book—the world,”—all I trust ready and anxious to communicate to others any knowledge we may ourselves possess; ready and anxious also to learn from others all that they can communicate. And by no means the least advantage arising from such studies consists in the inevitable result which habits of observation must produce, namely, that they call into existence, and provoke the exercise of, a process of self-education, without which no man is well-taught. True that in every physical science, where the great means of acquiring knowledge is by observation, much must be accepted on the authority of others;—unless we would have the human mind remain stationary, and allow the accumulated stores of one generation of men to be lost to another,—still each must for himself go over these observations, must trace the successive steps in the reasoning based upon them, and must, if he wish to apply them, stamp those reasonings with the impress of his own individuality; each must observe, each must compare, each must discover, for himself. Material forms and arrangements must be seen to be understood clearly, and the students are thus forced to consult the great book of the world itself, if they desire their information to be accurate; they are compelled to be the “children of nature and not her grandchildren.” And if such habits of observation and comparison ever be produced, we may rest assured that they will continue to be exercised. The great secrets of nature are not proclaimed in the market-place; they are not open to all, but are hidden in her inmost sanctuary, and if we would be honoured by her confidence, we must devote ourselves to her service. New methods of enquiry, new modes of research are called into play. The questions to be solved here, are not of our own imagination, they are ready prepared to our hands. We cannot here start from our own suppositions, and laying down

definitions, demonstrate identities as determined from a reference to such definitions. We must compare, we must determine resemblances by a reference to type and establish similarity in effects by their analogy with known results of known causes. And this practice of reasoning from analogy, this necessity for estimating degrees of probability, and for balancing varying amounts of evidence, and the habits of thought thus educed, constitute one of the marked advantages of the Natural Sciences as part of a system of education. They thus fill a blank by calling into active and continuous operation habits of thought, and by educating powers of mind, which neither the study of literature nor of the mathematical or social sciences sufficiently exercise.

We have had during the year the pleasure of welcoming back from Abyssinia our able associate, Mr. William Blanford, who had been attached as Geologist and Naturalist to the force engaged in that country, for the release of the prisoners confined there. During the progress of his interesting trip, the Society had received several communications giving brief accounts of his progress, which were full of interest, and at the last meeting (Dec.) Mr. Blanford completed these sketches up to the date of his return. At the same meeting, a considerable part of the valuable collections which he had brought back with him, illustrative of the Natural History and Geology of Abyssinia, was placed on the table, and bore ample testimony to the energy and enthusiasm which he had brought to bear on his enquiries. Since his return, Mr. Blanford has been engaged in the more careful examination of his collections, and in the preparation of his detailed reports. I sincerely hope that these may be, under the sanction of the Government of India, given to the public in a fitting form, with ample illustrations. It is true that the Natural History of Abyssinia has been perhaps better worked out, than that of any other equally unfrequented part of the African Continent, and that in consequence, the number of novelties brought back by Mr. Blanford has not been very large. But he has been fortunate in meeting several and in obtaining specimens also, which throw additional light on the structure and history of other animals the existence of which was known, but not with sufficient accuracy. Further, although many papers of high importance have been published in other languages treating of the Natural

History of Abyssinia, there is scarcely a single one in English, and certainly there never has been any attempt to give a general statement of the facts in our language. I feel also that the publication of such researches, under the editorship of the original observer himself, would be an object worthy of the patronage of a great Government like that of this country, and would be a fitting supplement to the enlightened interest which they have already displayed in, and the liberal sanction they have already afforded to, such scientific enquiries in the country they were compelled to enter. We look forward with great interest to Mr. Blanford's detailed reports, knowing how well prepared he was for the investigations he has been engaged in, by his long and eager study of the Natural History, and his intimate acquaintance with the Geology, of India. It was to me a great pleasure to urge the special fitness of my esteemed and able colleague for such a duty when at home last year, and I have no hesitation in expressing my conviction that the importance of the results will fully justify these anticipations. Of course, the extent of Mr. Blanford's acquisitions must be considered with reference to the very brief duration of his visit, and the necessity, under the peculiar circumstances, of his confining his researches to the immediate neighbourhood of the line of march of the force which he accompanied.

Another of our members, Dr. John Anderson, had been despatched with the expedition from British Burmah to Yunan, and also returned towards the close of the year. We have not yet had any detail of Dr. Anderson's observations in those little known countries, but the very valuable and beautiful series of costumes, weapons, implements, musical instruments, &c., portions of which are still hanging in this room, and which have been all open to the inspection of the public for days past, shewed what a rich harvest he had gathered, bearing on the history, habits and relations of the curious tribes among which he had been. The collection is also singularly suggestive of connection between these tribes and others. At the meeting in June last, some Panthay visitors were present, and a sketch of the history of this strange people,—an island of Mussulmans in the centre of a raging ocean of Chinese, which had withstood all the attacks made upon them, and had not only held out against their threatened destruction, but were yearly gaining in numbers, importance, and strength,—was

given by Maulvī Abdullatīf; drawn up from a MS. in Arabic by one of the Panthays themselves. We anticipate a large addition to our knowledge of these people, and of their border tribes, from the account of Dr. Anderson's sojourn among them, and hope it may be soon accessible to the members of the Society and the public.

The second part of the Journal for 1868, contains the usual meteorological returns for Calcutta up to close of August. The 1st number for 1869, now on the table, brings these up to the close of October. These had been allowed to get so much into arrear that, at the close of the preceding year, they had been issued only up to August, 1866. It is hoped that we shall in future be able to give these returns more quickly than hitherto; and that very soon the necessity for publishing them at all may be removed, by the issue in a more complete and general form, of tables exhibiting the chief meteorological elements, not only for Calcutta, but for Bengal generally, from the office of the meteorological reporter. We have seen, with pleasure, that the Government of Bengal has acted on the advice of their able officer, and enabled him, by visiting the out-stations, and personally conferring with the several observers, testing and comparing their instruments, and the modes of registration, to introduce a greater uniformity in the system, and thus obtain a greater regularity in the returns. This is the essential first step towards improvement, and we doubt not will bear good fruit; for, however interesting to local observers local observations may be, they fail entirely in leading up to any general results, unless they can be correlated with other observations in adjoining or more distant localities; and this correlation and comparison is worse than useless, unless the observations have been in each case conducted with nearly equal care, and on a uniform system. This element of success will now be secured for Bengal, by Mr. H. Blanford's visits to the Bengal stations. Similar efforts have been made in the N. W. Provinces, and we look forward to the adoption of a uniform system, throughout India generally, when it may be practicable to deduce from all the returns one general review of the meteorology of India. I would suggest that useful progress towards the accomplishment of this desirable end might be made, if monthly summaries

prepared by the officers charged with the record of these observations under each of the local Governments, were to be published together each month. The observations are now published in detail from week to week, but I think the information they afford, might, with great advantage, be summarized each successive month.

The great value, commercially, of these returns have been acknowledged during the year, by the application from Commercial bodies, for the publication of information regarding rain-fall, &c., in the Upper Provinces. And I cannot help thinking that more practical benefit would be derived from the issue of a brief summary of results each month, and indeed, I would hope, each week, than from the publication of a long list of detailed numerical results, which few persons ever look at; I would also gladly see a combination of the several returns now given. In Calcutta we have weekly publications of the results obtained at the Surveyor-General's Office, as well as those compiled in the office of the meteorological reporters to Government. Now, neither of these are complete in themselves. The establishment maintained at either office is insufficient to secure full and satisfactory results. And we would hope that arrangements may be made to combine both, and to form one really satisfactory, and thoroughly efficient, meteorological observatory. Hitherto no observations whatever have been made of the electrical elements, and their disturbances; none of the seismic phenomena, the importance of which in a general physical study of the country, we have been so recently reminded of,—no satisfactory photometric observations have been made, and—of still higher interest and importance practically—no trustworthy observations of the amount and distribution of evaporation.

I have no doubt all these important questions will receive due attention in time. And I am confident that the Asiatic Society, which has now for nearly quarter of a century steadily, and at great cost to itself, given to the public continuous returns of the meteorological results obtained in Calcutta, will rejoice to see such observations extended, systematized, and compared, with an amount of detail and care, commensurate with the importance of a knowledge of the atmospheric forces and their changes in direction or amount.

And here I would express our grateful sense of the manifold assis-

tance we receive from the Surveyor General's office. To Colonel Thuillier and Colonel Gastrell we are indebted for a continuance of the hearty and friendly aid they have invariably afforded to the Society, not only by their personal support, but also by the liberality with which they have aided the Society in bringing out the many illustrations which accompany the volumes of your Journal, and which, without this aid, it would have been impossible for your Council to publish.

I am happy to be able to announce to the Society that the various papers on the Ethnology of Bengal, which the Government have requested Col. Dalton to edit, together with his own report on the tribes among which he has so long laboured, and with whom he is so well acquainted, have now attained such progress towards completion, as justifies their being at once sent to press; and we may hope for greater progress being made during the coming year, towards their completion. Dr. Simpson has also completed the series of photographs of those tribes, which he had not before had an opportunity of picturing. The history of the native races in other parts of this vast empire has also attracted much attention, and the Society has received from various districts, valuable reports on the inhabitants, their history, languages, customs, &c. I would also here acknowledge the impetus which has been given to such studies by the publication during the year of Mr. Hunter's valued contributions to the study of the Non-Aryan races of India. These commend themselves alike to those who would desire to study the history of these people, with a view to trace out the curious and intricate relationship established by a study of their languages, and the evolution of these in successive ages—and to those who may be placed in positions of authority, and have to deal with these 'lapsed peoples' in their political and social relations. I am confident that no one is more thoroughly convinced of the fact, that these researches have not yet, and indeed could not as yet, have attained to any completeness or perfection than the accomplished author himself. But if in nothing else, then the greater facility which such a work as his Dictionary affords for seeing the errors, and, by eliminating these, making a still further advance towards truth—if in nothing else than this, every student of these Non-Aryan people—and who that has taken the slightest interest in the ethnological history of

India, has not been to some extent a student of these tribes,)—must feel largely indebted to Mr. Hunter. We look forward with great interest to the promised comparative grammar of these tongues, and trust the author may be enabled to carry out his intentions satisfactorily and quickly.

From the study of the races still existing in the less frequented districts of this country, or of which the last dying embers are still smouldering on the hill sides, the transition is easy to those Palæo-ethnologic enquiries which bear on that question of surpassing interest, the antiquity of man. I have recently published in the Records of the Geological Survey of India careful drawings of the agate flake or knife, found in the deposits of the upper Godavery, of the discovery of which I made the first announcement to this Society in 1865 (Dec.) and then briefly alluded to this great importance of the discovery. During the year, various additions have been made to our knowledge of the limits of area, over which these records of the stone age have been found. I would ask those who are interested in this investigation to compare the series which Dr. J. Anderson has brought back from China. And we have had the gratification of making known also the first instance of the occurrence in India of evidence of the use by early races of copper in the manufacture of implements of the same general character, as mark the use of this metal in other countries also. Some of these implements procured by Mr. Bassett Colvin near Mynpoorie have been proved to be of pure copper. But, as is generally the case in such enquiries, the announcement of this discovery (supposed to be unique) has led to the knowledge that others have been found elsewhere also. And possibly we shall before long have abundant evidence that, in India, as elsewhere, a certain law of successive development in the use and manufacture of metals has obtained. The very remarkable and very interesting discoveries in Coorg, of which your proceedings contain the record, and of which further details have since been received, cannot fail to prove of high interest, and to excite to similar research elsewhere. These, however, come down to a time, when we tread on the verge of historic records. I would more eagerly seek for the co-operation of many through the country in the search for proof of the existence of man in earlier times. And I would venture to give here, a very brief and

hasty sketch of the reasons which lead geologists to anticipate such discoveries.

I need scarcely detain you by recounting the several steps in the discoveries, which though commenced nearly forty years since, have only within the last ten or so, led to the general acceptation, as a fact, of the existence of man along with numerous animals which have since become extinct ; nor of the various ages which different authors have assigned to these instances. Four divisions have been tolerably well ascertained in Europe. 1. The ante-glacial epoch, or, as Lartet calls it, the epoch of the cave-bear ; 2nd the glacial epoch, or that of the Mammuth and Rhinoceros ; 3rd the post-glacial, or that of the reindeer ; and 4th, the actual, or that of the Aurochs. Now, you will perceive that this very simple enumeration of the principal animal remains, found contemporary with the evidence of man in these successive epochs, combines with the physical evidence, as indicated by the other names of glacial, post-glacial, &c., to shew, that enormous physical changes, bringing with them equally marked organic changes, had occurred over the surface of Europe, even in these very recent (geologically) periods. Still greater alterations both of surface and climate, and of the animals existing at the time had occurred in the periods immediately preceding those to which I have just referred. And the Miocene (Mammalian) fauna of Europe differs in almost every species from those which succeeded it. These tremendous physical changes brought about such changes in climate, &c., that the Miocene animals were succeeded by others fitted to live in a temperate climate, and these again by others who had to endure the intense severity of an Arctic winter, during the so-called glacial period. But if we now look to the history of later geological periods in India, we find no evidence of these great climatal changes, (so far as the greater portion of this immense empire is concerned). True, there is abundant evidence in the great ranges of the Himalayas to shew the former extension of the glaciers of those hills. But I am not aware of the existence of any such evidence beyond the hills ; certainly, I think, none which would prove any great lowering of temperature over a wide area. And coincident with this absence of change in physical conditions, we find an equally marked absence of change in the fauna. We have in India none of those very strongly marked divisions which exist in the successive faunæ of Europe.

Thus it happens, as first shadowed out by Falconer, that we find living at the present day the actual and unchanged descendants of several of those animals, the remains of which Falconer and Cautley found buried under some thousands of feet of the Sivalik deposits. And the evidence of the continuity of this descent is afforded by the deposits newer than the Sivaliks. The common Gharial left its bones on the mudbanks of the Sivalik period, just as it now basks on the muddy banks of our existing rivers. The little *Emys* (*Pangshura*) *tectum* lived then as now. Elephants then, as now, roamed through the Sivalik forests. True horses (*Equus*) existed; the Camel and Giraffe, cotemporaries of man at the present time, may have been his cotemporaries then also, while true oxen and buffaloes abounded also. The monkeys of that time can scarcely be distinguished from the Honumans which still chatter in our forests. We have therefore abundant evidence that, in India, the existing order of things has dated from a very remote period, and that all the conditions of those early times were suited to the requirements of man. Many of the animals have since then lived down to the period of man, and some exist now. Why then is not the reverse, or reciprocal, way of putting the statement equally admissible, that man had lived back to this early period?

In this peculiar relationship of continuity between the newer deposits of the Godavery and Nerbudda, and the older beds of the Sivaliks, consists one of the marked points of interest attaching to the discovery of evidence of man in any one part of the series. There is no sudden or marked break traceable in the Mammalian fauna which inhabited those countries at the successive periods, why should there be any break in the period through which man was a cotemporary of these animals?

In some very interesting and very important remarks made by my valued colleague, Mr. Wm. Blanford, last year, when the history of the stone implements found in various parts of India was before the Society, he pointed out very briefly how, even up to the present day, the fauna of India presents a remarkable mixture of African and Malay forms; and how the fauna of the Nerbudda gravels, so far as known, appeared "to have been either purely Western, (African and European) in its affinities or to have been much more nearly allied

to the Western fauna than is that now existing." Mr. Blanford also argued very justly, that the case which he instanced in the Nerbudda faunæ of the complete substitution of one animal for another of distinct affinities, indicated that a larger lapse of time had intervened since the deposition of the Nerbudda beds than had taken place in Europe since the formation of those pleistocene beds in which the oldest remains of man yet discovered have been found; "and since which no such case of substitution was known." The reasoning appears to be perfectly correct, inasmuch as we have no evidence of a great change of climate since that early period. But I venture to think that Mr. Blanford has not stated the whole truth. And I believe he would agree with me in thinking that this intimate connection with the fauna of Europe and Africa to which he alludes, as regards the comparatively recent beds of the Nerbudda, can be traced with perfect certainty back to the very base of the Sivaliks, and that the mammalian fauna of India (West and North-West) was one and the same with the fauna of Europe and Africa during the miocene period. We have as yet no evidence to decide the question whether the same animals wandered over the same area at the same time; which, however, is a totally different question. And there were also, and of course, geographical differences in the animals then, precisely as there are now. But the discoveries of Gaudry in Greece some six years since shewed at once that the miocene fauna of Pikermi differed not more from the Sivalik fauna of India on the one hand, than it did from the true miocene of Germany and North Europe on the other. Mastodon, Hipparion, Hyænodon, Musk-deer (*Dremotherium*), Giraffe, and Satyroid apes, all, form units in the evidence which indissolubly connects the upper miocene of Europe with those of the Sivalik Hills. And when examined with a little more detail in comparison, we find that the living species which come nearest to the fossil species found in these rich deposits of Pikermi and elsewhere in Greece, the spotted Hyæna, the two-horned Rhinoceros, the Zebra, the Giraffe, and several antelopes are peculiarly African. Further, Unger found among the vegetable remains which occur in numbers close by in Eubœa (and on the same geological horizon) more than 40 per cent. most nearly allied to forms now living in Southern Africa.

We have already alluded to the absence in India of any of those

great physical changes accompanied by marked organic differences subsequently to this Upper Miocene period. And to this cause is due the fact to which Mr Blanford so justly drew attention, that the fauna of the Nerbudda valley-beds, has a nearer alliance with the Western or Africo-European fauna, than has that now existing in the Nerbudda district. The two faunæ were in fact one in earlier times, and the divergence since then has been most gradual and is still in progress.

Gentlemen, I allude to these researches not so much for the object of exciting attention to the very startling and very important facts which these truths contain, but rather to point out how essential it is that in such enquiries we should be convinced, that the only true solution to be sought for in such problems, is to be obtained from a careful study of the existing animals in each country, and then of the relations which the extinct forms bore to them. I have purposely endeavoured to avoid as much as possible the use of terms derived from European geology, save when speaking of European results, because I feel convinced that the basis of the classification which has hitherto been adopted for these geologically recent deposits in India, has been erroneous. To appeal to Europe for evidence of the geological age of our Indian deposits, is to appeal to witnesses who cannot know the facts, and must therefore give irrelevant or false evidence. Would an Australian geologist be justified in admitting his cave deposits to be secondary, because in Europe marsupial animals were found in secondary rocks; reversing the question, would an European geologist declare the deposits which hold these marsupial remains to be of recent age, because marsupial animals now existed in Australia? The only key to a knowledge of the true succession of Indian rocks is to be found in India, and too much caution cannot be insisted on, in attempting to adapt to this country laws of distribution of animal life derived from the investigation of other and distant lands.

As Falconer eloquently pointed out long since, it is in India, if anywhere, that we must hope to solve the great problem of the succession of life. Here, if anywhere, shall we find in these ancient alluvia of marvellous extent, some of those intermediate forms, all but totally wanting in Europe.

The year just closed, has witnessed very signal proof of the ardent desire of the Government of this country to disseminate an intelligent knowledge of its history and literature. At a cost, which some few may appear enormous, but which is in reality scarcely immensurate with the vast interest of the enquiry, sanction has been given to the examination and actual repetition by exact and full-sized models of parts of the more interesting architectural remains of the country. For some time past, the Government of the Upper Provinces have been from year to year, at considerable cost, doing much for the preservation and renewal of the many glorious remains, which give such a magic interest to the great cities of those provinces. What student of the architecture of former dynasties, (and in what way can the genius of any distinct race be more satisfactorily studied than in its architectural remains) has recently visited Delhi or Agra, and has not felt grateful for the enlightened spirit in which the magnificence of their buildings has been preserved and renewed, unsightly obstructions moved, and the grandeur and gigantic nobleness of conception which mark these erections made patent to every visitor. And now the Government of India have gone further, and while carefully preserving these noble monuments of former civilization, have determined that their most striking beauties shall be repeated in Europe, for the admiration of every one who can admire gracefulness of outline, massiveness of design, andondrous skill in execution. In addition to this, skilled enquirers have been deputed to investigate, measure, and describe, some of the more ancient and less known remains in various districts. Our own active member, Rajendralála Mitra, has but recently returned from Orissa, with a large mass of detailed information on the curious remains in that district, which we trust he will be enabled to make public soon. With great regret, we know that his visit to those malarious jungles has resulted in a very serious illness, which has prevented his being present among us this evening.

Lieut. Cole, R. E., who is also one of our members, has in a similar way been engaged in the examination of the highly interesting architectural remains of Cashmere. And we look with great interest for a more detailed and careful description of these very curious buildings from his pen. So curious and so different are they from any other type, that Cunningham classed them as belonging to a

new order of architecture to which he gave the name of Aryan. This, however, has, by nearly general consent, given place to the term 'Cashmere' order or style, as the former name conveyed an idea that the builders of these temples were of an Aryan race. I would hope that Mr. Cole's researches may be extended to the Punjab, where remains, in many respects similar to the Cashmere temples, are to be found, but with very distinctive peculiarities. During a brief visit to the Salt range in 1864, I had an opportunity of seeing several of these, and of making sketches of them. And I felt satisfied that they had been too hastily referred to the same type as the Cashmere buildings. With many things in common, they differ entirely in the character of the roof, which here assumes the form of a square truncated pyramid, with bulging or curved sides; a form which, I should think, indicates a distinct transition to the true Jaina forms. But we require much more detailed examination, before pronouncing definitely on the facts.

I would also refer to the most interesting and valuable papers of Mr. Ferguson on the tope of Umrawutti, near Bezwara in the Madras Presidency, as an evidence of the great interest which Indian architectural remains are now exciting. Some few specimens from this very wonderful Buddhist erection are in the Society's collection, and the members can judge for themselves of the marvellous detail and beauty of the sculpture which adorned its walls.

More recently, the Government of India have, with great liberality, taken steps to secure the possession of a complete list, and also of a complete a library of Sanskrit works, existing at the present moment in India, as may be practicable. The Government have referred to your Society for advice and aid in this very important step, and the matter is now under the consideration of the Philological Committee. The Society cannot fail also to feel gratified at the entirely unsolicited acknowledgment of their long continued efforts to promote a knowledge of Oriental literature, which the resolution of the Governor-General in Council to place at the disposal of the Society, in furtherance of the publication of Sanskrit works of importance a sum of Rs. 8,000 per annum, in addition to the Oriental Publication Fund, already in the management of the Society, conveys. There is, I regret to say, a considerable difficulty in obtaining the aid of properly quali-

ed Sanskrit scholars to carry Sanskrit works through the press, and it would seem that the resolution to catalogue, and bring together a complete series of Sanskrit literature, has by no means been taken up too soon.

I would hope that, on completion of the proposed Catalogues of Sanskrit works, a similar step may be adopted with reference to the numerous Persian and Arabic works which exist scattered in the libraries of native Princes and gentlemen throughout the country.

In connection with Oriental studies, it is a source of gratification to hear from Bábu Rajendralála Mitra, who has acted as Secretary to the Fund, that from scholars in India, who appreciated the value of Bopp's contributions to comparative grammar, a very considerable sum has been remitted in aid of the Bopp Commemorative Fund.

I cannot conclude without expressing to you the obligations under which, in common with every member of the Society, I feel myself to our executive officers and Council. When we first came together, and, indeed, with much anxiety, obtained a full knowledge of the heavy amount of liabilities that were hanging over the Society, it was seriously debated whether it would not be necessary to cease for a time the publication of your Journal, and thus, in fact, give up the only evidence we do offer to the outside world of our useful existence. Ruinous as we felt that this would be, we thought honesty demanded that our debts should be paid. If this misfortune has not fallen upon the Society,—if instead of ceasing to issue your Journal, we have been enabled to make the volume for the past year larger, and to bring it before you more punctually than in former years, you owe your thanks for this gratifying result to the devotion of your Secretaries; and above all, to the care with which the Finance Committee of your Council have guarded your resources. To Col. Gastrell, as your Treasurer, and to Dr. Partridge as a member of that Committee, we all owe a very hearty expression of our thanks for the assiduity and attention with which they watched over your interests. To the Council at large, I must be allowed to express my own thanks for the kindly support they have accorded to myself during the term of my office.

Allow me now to express my lasting obligation for the unmerited honour you conferred on myself by placing me in your chair. I am

painfully conscious of how inadequately I have been able to fulfil the duties of the important office of President. Of one half of the discussions brought before you, those bearing on Oriental literature, I most candidly confess my entire ignorance. And I cannot but think that the selection of some other, more permanently resident in Calcutta, and less harassed by pressing claims upon his time from other work than I am, would have been more beneficial to the Society's welfare. I can, however, assure you that none can be more truly desirous of the well-being of the Society, none more sincerely and thoroughly convinced that your success is interwoven with the progress of Science and truth in this country: and limited as has been the range of my own labours and little as I know, I have endeavoured to show, at least, that I do know the value of knowledge, and would desire to foster and aid in the acquisition of it. For the kindness with which my efforts have been received, I feel greatly indebted to the members of the Society. I trust our meetings may ever be distinguished by freedom of discussion and freedom of intercourse, by an unflinching expression of opinion, and an equally unflinching kindness of feeling towards those with whom we may differ. If in aught I have done well, so far I have done according to my wish. And I thank you for the additional proof you have this evening given, that my willingness and desire to promote your interests are not doubted, however I may have failed in my ability to accomplish that desire.

Ordinary Meeting.

The meeting then resolved into an ordinary monthly meeting.

Th. Oldham, Esq., LL. D., in the chair.

The minutes of the last meeting were read and confirmed.

The receipt of the following presentations was announced—

1. From Bábu Rajendralála Mitra, specimens of shells collected on the sea shore near Puri.

2. From Dr. Shekleton, a copy of Assay Tables of Indian and other coins.

3. From Baden Powell, Esq., a copy of Report on Panjab Products, Vol. I.

4. From the Superintendent G. T. Survey, two copies of Report on the operations of the Survey Department for 1867-68.

The following gentlemen duly proposed and seconded at the last meeting were elected ordinary members.

Dr. P. F. Bellew.

A. Cadell, Esq., C. S.

C. C. Adley, Esq.

The following gentlemen were announced as candidates for ballot at the next meeting of the Society.

Major Ross, proposed by Dr. J. Anderson, seconded by H. Blochmann, Esq.

The Rev. J. P. Ashton, proposed by Rev. J. Long, seconded by Dr. J. Anderson.

Thakur Giriprasad Sing, proposed by H. Blochmann, Esq., seconded by Dr. Stoliczka.

Fred. Drew, Esq., Junmoo, proposed by Dr. T. Oldham, seconded by Dr. F. Stoliczka.

Louis Schwendler, Esq., proposed by F. Schiller, Esq., seconded by Dr. F. Stoliczka.

J. Pickford, Esq., proposed by Bábu R. Mitra, seconded by Dr. T. Oldham.

Sirdar Attar Sing, Chief of Bhaddour, proposed by E. C. Bayley, Esq., seconded by Bábu R. Mitra.

T. Thomas, Esq., Barrister-at-law, Lucknow, proposed by H. Blochmann, Esq., seconded by Dr. F. Stoliczka.

Dr. Baxter, proposed by W. Swinhoe, Esq., seconded by Dr. Stoliczka.

Bábu Protapa Chundra Ghose, proposed by H. Blochmann, Esq., seconded Dr. F. Stoliczka.

The Hon'ble John Strachey, proposed by Col. R. Strachey, seconded by Col. Thuillier.

The following gentleman has intimated his desire to withdraw from the Society,—The Hon'ble C. P. Hobhouse.

The President remarked that as the evening was far advanced, he would suggest that the reading of the papers which had been advertised, and other communications sent to the Society, be postponed for the next meeting. This was generally accepted and the meeting broke up.

LIBRARY.

The following additions have been made to the Library since the last meeting.

Presentations.

. Names of Donors in capitals.

The Proceedings of the Royal Society, Vol. XVI. Nos. 104, 105,—THE ROYAL SOCIETY OF LONDON.

Proceedings of the Royal Institution of Great Britain, Vol. V., part III. No. 47,—THE ROYAL INSTITUTION.

Proceedings of the Zoological Society of London for 1868, January to June, and Index to the Proceedings from 1848—1860. Transactions of the Zoological Society of London, Vol. VI. parts 6 and 7,—THE ZOOLOGICAL SOCIETY.

Professional Papers on Indian Engineering, Vol. V. No. 21,—THE EDITOR.

The Calcutta Journal of Medicine, Nos. 9, 10 and 11,—THE EDITOR.
Rahasya Sandarbha, Vol. V. No. 49,—THE EDITOR.

Classified Catalogue of printed Tracts and Books in Singhalese,—THE COMPILER.

The Gospel of Matthew in Santhali,—THE REV. E. C. STEWART.
Santhali Vocabulary,—THE SAME.

Assay Tables of Indian and other coins by J. F. Shekleton, A. B., M. D.,—THE AUTHOR.

Monographie du genre *Cyathopoma* par W. T. Blanford,—THE AUTHOR.

Note sur les *Nicida* par W. T. Blanford,—THE AUTHOR.

Discours d'ouverture,—Mons. G. DE TASSY.

Selections from the Records of the Government of India, Foreign Department, No. LXVIII.—THE GOVERNMENT OF INDIA.

Selections from the Records of the Madras Government, No. IX.—THE SAME.

Selections from the Records of the Bombay Government, No. LVIII.—THE SAME.

Report on Public Instruction in Coorg for 1867-1868,—THE SAME.

Report on Public Instruction in Mysore for 1867-1868,—THE SAME.

Report on the past famines in the Bombay Presidency,—THE SAME.

Pharmacopœia of India by E. J. Waring, M. D.,—THE SAME.

Selections from the Calcutta Gazettes, Vol. IV,—THE SAME.

Annual Report on Meteorological Observations registered in the Panjab, 1867,—THE SAME.

Panjab Products, Vol I,—THE GOVERNMENT, NORTH WESTERN PROVINCES.

Report on Insects destructive to woods and forests by Mr. R. Thompson,—THE SAME.

Report on the Trade and Customs of British Burma for 1867-1868,—THE GOVERNMENT OF BENGAL.

Geographical and Statistical Report of Táná, by Captain D. Macdonald,—THE SURVEYOR GENERAL OF INDIA.

Annual Report of the Revenue Survey Operations for the Lower Provinces for 1867-68,—THE SAME.

General Report of the Revenue Survey operations for the Upper Circle for 1867-68,—THE SAME.

General Report on the operations of the Great Trigonometrical Survey of India for 1867-68.

Purchase.

The Calcutta Review, Nos. 94 and 95.

The Edinburgh Review, No. 262.

Revue et Magasin de Zoologie, No. 10.

Revue Archéologique, Nos. 10 and 11.

Revue des Deux Mondes, 15th October and 1st November.

Journal des Savants, September and October.

Comptes Rendues, Nos. 12—17.

The Ibis, Vol. IV. No. 16.

The Annals and Magazine of Natural History, Vol. II. No. 11.

The American Journal of Science, No. 137.

Hewitson's Exotic Butterflies, pt. 68.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR FEBRUARY, 1869.

The General Monthly Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd February, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced.

1. From Bábu Mádhavá Krishná Setha, a specimen of a fungus from the neighbourhood of Calcutta.

2. From Col. R. E. Oakes, a box of flint implements collected in the neighbourhood of Jubbulpore.

The following letter, addressed to Col. Gastrell, accompanied the donation.

“ My attention was first drawn to these relics of past ages, by the late Lieut. Sweeney, of the Bombay Engineers who discovered numbers of them, lying about on the hills and high ground in and around Jubbulpore, and at a little distance below the surface.

“ The geological formation of the Jubbulpore Basin has been examined by the Geological Survey of India, and I will, therefore, merely describe, as nearly as I can, the sites on which I have found the greater number of the specimens. They are limited to three or four spots.

“ The first and the most prolific bed occurred on the top of the hill north-east of Jubbulpore, at present used as a sanitarium for the Jubbulpore European troops. The flints were scattered about in considerable numbers on the surface; I must have collected some hundreds from this site alone, many of which I afterwards discarded as mere fragments, and very imperfect. They all, however, bore dis-

tinct traces of having been worked by man. The specimens found here were principally the grooved cores and thin splinters. A second site was on the ridge which runs in a north-easterly direction from the above named hill; it is principally composed of limestone, hard and compact. I have failed to find any traces of fossils in the limestone, which I have frequently examined.

“A third site is on the high ground on the base of the granite hills, north and north-east of Jubbulpore. In this place, many good specimens were found, all splinters and grooved cores. On the flat topped hill at the back of the European infantry rifle range, many specimens were found, principally of the knives and chisels, if they may be so called; few if any of the cores were found here.

“On the high ground, west of the Nagpore road, about a mile and a half from the station, many chips are procurable. I have also found specimens in the Seonee district, notably on the high knolls met with on the plain around Lucknadow Rhas.

“Further, on a mound about a mile south-east of Seonee, on the Ruttughee road, and in other parts of the district on the surface soil, lying upon the Trap on the plateaux.

“Many of these implements appear to me precisely similar to some of the specimens in the collection of M. Boucher de Perthes, as illustrated in the diagrams of his most interesting work “*Antiquités Celtiques et Anté-diluviennes*.” The specimens, therein figured, were all extracted from the drift beds in the vicinity of Abbeville, in the valley of the Somme.

“The account of their discovery and the probable uses of these implements are most ably discussed in the above named valuable work. I regret that I have only one specimen (an imperfect one) which I have retained, of the large axe, commonly known as Celt, of which several excellent specimens have been found in the Jubbulpore district, but all, as far as I know, in the country to the north of Jubbulpore. I have seen these specimens, and could procure drawings or copies in wood, if they would be considered of any value to the Society.

“It is a very remarkable circumstance that these flint implements are, with few exceptions, found lying in masses within a limited area by themselves, and not mixed up with the rough agates from which they have been manufactured. Agate beds are sometimes found near,

but distinctly separate, none of the chips as a rule being found in the rough beds, and but few of the rough agates intermixed with the chipped stones.

“Should this fact be further confirmed by the experience of other collectors, it will tend to indicate very conclusively that the manufactured flints were collected and massed for a purpose.”

“*Seonee, January 10th, 1869.*”

The President said, the cores and flakes submitted to the Society, were of precisely the same general character as others which had been more than once met before. One of the interesting facts noticed by Colonel Oakes was, the finding these chips in heaps by themselves, unmixed with the rough agates, out of which they had been formed, and on the other hand none of the chipped flakes were found among the rough agates. Facts of a similar kind had been noticed in Europe also. He (the President) had himself seen in the north of Ireland, where flint implements were commonly found, similar heaps composed of nothing but the chips and fragments of rough flints, with occasionally a half-finished arrow-head, or, some other implements in the heap. These had evidently been the seats of manufacture of these flint-implements; and what were now found were only the rude chips and fragments remaining after the production of the more useful and finished implements found out of these agates, and which had been removed for use.

Mr. W. Blanford said, that Colonel Oakes, had shewn him the localities whence the flakes and cores were derived near Jubbulpore, and had gone over the ground with him. He had since met with similar flakes and cores near Nagpore, as described to the Society in 1867. The quantity occurring near Jubbulpore was astonishing. In reply to a question from the President, Mr. Blanford added, that he had usually found such flakes to be abundant in small restricted localities, frequently on the tops of low rises, where no rolled agates occurred, and in such a manner as to leave it to be inferred that the spot where they were found, was a place used for the manufacture of agate flakes during probably a considerable period; it may perhaps have been the abode of a flake-maker. An instance which occurred in Abyssinia had already been mentioned by him (Mr. Blanford). Around a small granite hill, numerous such flakes of Obsidian were

met with, although none were noticed in the surrounding country, which was entirely composed of granitic rock, so that the Obsidian must have been brought from a distance. Mr. Blanford also mentioned his having found last year a core of black chert, perfectly similar to some of the Central India ones, close to Magdala in Abyssinia.

Col. R. Strachey and Dr. Stoliczka made some further observations in connection with the occurrence of the implements in the north of France and along the Danish coast.

The President said that another similar communication had been received, which may throw some light on the subject under discussion. The Secretary then read the following—

*Memorandum on the Cromlechs found in Coorg,** by Lieutenant R. E. Cole;—communicated through L. Bowring, Esq., by the Government of India.

1. The following is the result of further excavations made near Fraserpett. My first researches were made on some high ground, partly covered with bamboos and scrub jungle &c., situated to the right of the road leading to Mysore, and about half a mile from the bridge across the river Kaveri. There were about 500 Cromlechs, occupying a distance of nearly half a mile, showing that there had been a large settlement of the mysterious race of man (of pre-historic man at any rate, as regards our knowledge), regarding whom all our researches and conjectures have been as yet futile.

2. There were 17 of these ancient structures excavated and the dimensions were as follows:—

No.	Length.		Breadth.		Depth.	
	Feet.	Inch.	Feet.	Inch.	Feet.	Inch.
1,	11	3	6	9	3	7
2,	8	3	4	5	0	0
3,	7	0	4	6	0	0
4,	8	3	6	0	0	0

* This paper was accompanied by several coloured drawings, lithograms and a photogram. The former represent several of the Cromlechs, in shape resembling the one of which a figure was given in the Proceedings for June last. Others were drawings of pottery, in many respects also resembling those published in the Proceedings for August last year.

5,	9	0	5	0	0	0
6,	8	0	6	6	0	0
7,	6	3	4	0	4	3
8,	6	0	3	9	4	0
9,	7	10	3	4	0	0
10,	7	0	3	6	0	0
11,	6	0	4	0	0	0
12,	* { 7	2	2	6	0	0
	6	6	3	5		
13,	7	0	4	6	0	0
14,	7	2	4	8	0	0
15,	10	3	7	6	0	0
16,	8	0	5	8	0	0
17,	3	10	2	4	1	4

Some of these Cromlechs were distinctly visible, whilst others were only traceable by the circles of stones round them, the superincumbent slabs being about a foot or two below the surface of the ground, and often covered over by bamboo clumps and low jungle, shewing that they had not been disturbed by the hand of man for ages past.

3. Some were found without top or side-slabs ; but, in some cases, the granite of which these slabs consisted, was so far decomposed, that it crumbled to dust and could scarcely be traced in the soil. One had no side slabs, but had slabs at each end and at the bottom. Another had no top slab, but the sides and bottom slabs were perfect, and in one end-slab, facing the east, was the segmental aperture which formed the entrance or door, as described in my former reports. This Cromlech was situated within a circle of stones of 25 feet diameter. All the Cromlechs in this locality were within such circles, and some in concentric circles. Again in another the top consisted of 2 large slabs, each one foot thick.

4. The Rev. Mr. Richter, the Principal of the Government Central School, has kindly photographed one of the Cromlechs.† It is within a circle of 14 feet in diameter, consisting of rough unhewn boulders of granite, 3½ feet high, and 2 feet broad. The aperture is 1 foot 7 inches wide by 1 foot 2 inches deep. The top slab is almost on a level with

* Measurement of top slab only.

† Copies of this photogram accompanied the present memorandum.

the bottom of the boulders of rock around it. This fact would distinctly indicate that such a structure could not have been used as a residence, as it must have been flooded by each heavy shower of rain.

5. About a mile to the north of Fraserpett, on the road to Sommarpett, I found a number of Cromlechs; but most of them had been tampered with, apparently by the wudders for the sake of the slabs. One was 8-9 feet long by $5\frac{1}{2}$ feet broad, and $3\frac{3}{4}$ feet deep. It was within a circle of rough stones of 47 feet in diameter. This is the largest circle I have observed in Coorg. Another was $7\frac{1}{2}$ feet long by 5 feet broad, and 4 feet 2 inches deep. Both of these had segmental apertures facing due east.

6. At Ramasawmi Kunné, about 5 miles to the north of Fraserpett, I found a number of these rude structures, and had four of them excavated. In all these Cromlechs I found similar remains of antique pottery, bones, and pieces of iron. Some of the urns are unique and really beautiful in shape. Mr. Richter has also photographed* groups of the urns, vases, &c. Lieutenant W. Freeth, Assistant Superintendent of the Revenue Survey in Coorg, has also taken drawings of these vessels, and kindly given a sketch-lithogram of them. In the lithograms, submitted with this memorandum, some of the vessels are those found in the Cromlechs situated beyond the bridge, others those which were found near Ramasawmi Kunné. Some of these deserve special notice. The smaller goglets are composed of beautiful black pottery highly glazed or polished. A large round pot with three small tubes, would clearly indicate, that the process of distillation was known to the original constructors of these mysterious structures, or, that these structures have been used by subsequent and different races.

The finding of such a vessel, so different in its use from the Cine-rary urns and other vessels generally met with, would again open the question as to whether all such structures were tombs, or whether some were used as residences. It can be said that food, &c., might have been placed for the use of the spirits of the dead; is it, however, possible that a still was supplied to enable such a spirit (perhaps one of a known thirsty soul), to procure a further supply; but this is to rush into the regions of fanciful imagination, and as aptly said by a late writer on the

* Copies of the photograms were also sent.

subject : "It is open to the mind to people times about which history is "absolutely silent with men of any race, speech, or social condition, "which it may think good. It is open to conceive, objects of whose "use or origin we have absolutely no record, as being brought into "being for any end, which it may think good."

7. Further from Ramasawmi Kunné, and about half way to Sommarpett, in the very heart of the jungle, I found a few more Cromlechs, and opposite to one, a fallen square pillar, which was covered with an inscription in some character, which neither I, nor any of my officials have been able to decipher as yet. The letters are much obliterated by the action of time; but some would look like old Canarese. I will try and obtain photograms, or impressions taken off the stone, and will submit them hereafter. The inscription is surmounted by an engraved cow and calf.

8. In one of the Cromlechs, in which fragments of bones were found, a portion of the human jaw with two molar teeth in fair condition, was found and forwarded through Mr. Bowring, C. S. I., Commissioner of Mysore and Coorg, to Dr. Oldham at Calcutta, for inspection and comparison. I would also submit a piece of crystal which was found in the Cromlechs at Virajpett, but which was laid and forgotten. It is very hard and slightly cuts glass.

9. One of the urns found in the Cromlechs at Fraserpett was full of paddy, the husk of which was in perfect preservation, whilst the grain itself had completely disappeared. In others I found rági.

10. Mr. H. F. Blanford has shewn in his interesting lecture on pre-historic man, that the pottery of the stone-age was rude in form and in material and, that having been moulded by hand, without the aid of the potter's wheel, it was of irregular form and unequal thickness; but the vessels found in the Cromlechs of Coorg are well, some beautifully, shaped and of equal thickness throughout, which would show that they are of a more modern period.

11. The most remarkable Cromlechs I have yet seen in Coorg, with the exception of the double-chambered structure at Virajpett, described in my former reports, are situated in the same direction as those last described, but nearer Sommarpett. There are only four constructed on the rocky summit of a hill, which commands a fine and extensive view all round. These Cromlechs have a circle of

stones round each, but stand out in high relief, and have never been covered with earth or stone. [In the centre of the lithogram, Mr. Freeth has given a sketch of these interesting structures, and I have also the pleasure of forwarding for submission to the Government, colored drawings of the group and of each separately executed by the same officer.]

12. These Cromlechs were quite empty and the largest, measured inside, is 7 feet three inches long, by 6 feet high and 5 feet wide. The superincumbent slab was 11 feet 8 inches long, by 8 feet wide. These Cromlechs were evidently not used as tombs, and I am strongly of opinion that they must have been altars. The sun was the most ancient universal object of idolatrous worship, and the moon also received the early veneration of mankind; and placed as these structures are, in high relief, on the summit of a rocky hill, they would appear fit places for those anniversary fires and sacrifices, in which the earlier races of man delighted.

13. It might be interesting and of use to trace the names by which these monuments of an unknown race and of pre-historic times are known in different parts of India. In Coorg they are called *Pandupárré*, or the stone of the *Pándus*, and also *Pundera mané* or house of the *Pándus*. These two words must not be confounded with each other. The *Pándus* are the descendants of the celebrated five brothers, whilst the *Pundárus* are a legendary pigmy race, who are popularly supposed to have occupied these rude structures. In the Malayalum language, which bears a strong affinity to the Coorg dialect, the term used is *Panduporre*, though such structures have not been found in the Malayalum country. The word *porre* means a small hut; in Tamil *póre* also means a large stone. In the Canarese language these antique structures are often called *Mandávára mané*, derived from the Sanscrit, and signifying the houses of the dead.

The President said that the jaw, alluded to by Lieut. Cole, unfortunately never came to hand. He hoped that it had not been lost in transmission by post, and that it may soon be recovered. The following letter has been received by him (the President) from Mr. Bowring, regarding that gentleman's recent visit to some of the places where numerous Cromlechs are situated.

I visited this morning a hill called Móri Betta in the Mólte village, the Nirata Hóblí of the Yélusávira Shímé Teluk of Coorg, where there are a great many Pándava Kalla (stores), as the Coorgs call them. The hill in question is about three miles north of Somawárpett, is of no great height, but covered with low jungle and black rocks. The Cromlechs, if one may so call the stone structures in question, are rather more than 50 in number, facing in various directions, and scattered about at distances of 5 or 10 yards from one another. The photograms which you have seen, give an excellent idea of them, but I may mention that the dislodged stones appear to have been sunk only 2 feet beneath the surface, so that it is improbable that by digging deep under ground, further discoveries would be made. The interiors may be 8 feet by 5, and all of the structures have a rear stone, pierced with a round hole, which would just admit a man's body. One of them, which was in slightly better preservation than the others, appeared to have been surrounded by two small verandas, — only a yard wide, however, — and at the south two large stones had been erected which had been cut so as to form a rude arch. There were no traces of a stone staircase as an approach to this building. The Coorgs are absolutely ignorant of any past history attached to these singular structures, but it must be remembered that their own annals do not reach further back than the time, when the first of the Haleri dynasty, who were Lingayuts of the Coorg Division of Mysore and not true Coorgs, began to rule the province; 250 years ago. It is indeed probable that the Coorgs were themselves invaders and came from the Malabar side, as I imagine that their habits resemble those of the Nairs of that country. The aborigines were probably the low castes, who still form the mass of the population, over whom the true Coorgs rule in a paternally despotic fashion, which formerly was simple slavery. It is impossible to form an accurate judgment whether the structures in question were dwelling-places or cemeteries. The people think they were the former, but there is not the slightest trace of smoke on the roofs, which would, I apprehend, have been the case, if they had been lived in; on the other hand, no skeletons, or jars containing coloured ashes, have been found, such pots as have been discovered containing only earth. Some rági seed, various utensils, such

as I have sent you, and a few rusty implements have been met with. I have requested Captain Cole to get the structure which I have referred to excavated, and to report the result, but I have not much hope of further discoveries of interest being made, while the waddurs, or stone-cutters, have done their best to demolish the buildings, and, I presume, abstract their contents."

A short discussion followed on the same subject, in which several members took part.

The President then exhibited on the part of Colonel R. Strachey an axe which, he (the President) said, possessed a great resemblance to similar implements found in Europe. The axe had a long curved and sharp edge, gradually attenuating behind into a kind of a straight handle, which has the edges flattened, so as to allow it to be easily used in the hand. The material from which the axe had been made, appeared to be bronze,* and if this was really the case, the implement would be of extreme interest; it would be the first example of a true bronze weapon of that kind having been found in India. The only remarkable thing is a regular serration, as if it had been made with a file, on one side of the sharp front edge. It would be very interesting to know where the axe was found and under what circumstances.

Col. Strachey stated, the only history he was able to give was, that the specimen was said to have been found somewhere near Jubbulpore, and was given to Mrs. Strachey when passing through that station.

The President thanked on the part of the meeting Colonel and Mrs. Strachey for the opportunity of exhibiting that interesting relic.

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected ordinary members.

Major W. A. Ross, R. A. (re-elected.)

The Rev. J. P. Ashton.

F. Drew, Esq.

L. Schwendler, Esq.

J. Pickford, Esq.

T. Thomas, Esq.

Sirdár Atlar Singh.

* Mr. Tween has since carefully analysed portions of this axe and showed it to be bronze. Its composition is 86.7 parts of copper and 13.3 parts of tin in 100 parts.

Dr. J. B. Baxter.

Bábu Pratapachandra Ghosa, B. A.

The Hon. J. Strachey.

Thákura Giriprasáda Sing.

A letter from A. Anderson, Esq., Fyzabad, intimating his desire to withdraw from the Society, was laid on the table.

The Council reported—that they have sanctioned the publication, in the New Series of the Bibliotheca Indica, of an English translation of Sankara's Commentaries of the Vedánta Sutrá. The work is to be executed by the Rev. K. M. Banerjea.

Further—that the collection of the MSS. of the Ruba'iyá i 'Owar Khoyyam has been completed, and that the work is to be printed in the Bibliotheca Indica in one fasciculus.

The President stated, that the Council recommended, that His Excellency the Viceroy be solicited to become Patron of the Society. This office was vacant in consequence of the departure of Sir John Lawrence, who had held it. The usual course was that a deputation of the officers of the Society should wait upon His Excellency, and solicit his acceptance of the post—a course which the Council proposed to adopt on the present occasion.—Passed with acclamation.

The President also reported, that the Council recommends the following gentlemen to serve in the several Committees for the ensuing year. The names of the officers are not included in this list, they being *ex officio* members of all Committees.

COMMITTEES FOR 1869.

1.—*Finance.*

Dr. S. B. Partridge.

Col. H. Hyde.

H. F. Blanford, Esq.

2.—*Library.*

The Hon'ble J. B. Phear.

H. F. Blanford, Esq.

W. S. Atkinson, Esq.

Bábu Rajendralála Mitra.

Dr. J. Anderson.

H. B. Medlicott, Esq.

W. G. Wilson, Esq.

A. Pirie, Esq.

3.—*Philology.*

E. C. Bayley, Esq.
 The Hon'ble J. B. Phear.
 The Rev. J. Long.
 C. H. Tawney, Esq.
 Bábu Rajendralála Mitra.
 Mouli Abdellatif Khan Bahádur.
 Bábu Yatindramohana Thakura.

4.—*Natural History [including Physical Science].*

Dr. J. Fayrer, C. S. I.
 H. F. Blanford, Esq.
 Dr. T. Anderson.
 Dr. S. B. Partridge.
 W. S. Atkinson, Esq.
 Dr. J. Ewart.
 Bábu Debendra Mullicka.
 H. B. Medlicott, Esq.
 Lieut.-Col. J. T. Walker.
 V. Ball, Esq.
 D. Waldie, Esq.
 Dr. Mohendralála Sircara.
 Dr. J. Anderson.

5.—*Coin.*

E. C. Bayley, Esq.
 Bábu Rajendralála Mitra.
 Col. H. Hyde.
 Major F. W. Stubbs.

6.—*Ethnological.**Linguistic and Physical.*

Dr. J. Fayrer.
 Bábu Rajendralála Mitra.
 The Hon'ble W. Markby.
 Dr. J. Anderson.
 Dr. S. B. Partridge.
 Dr. J. Ewart.
 H. F. Blanford, Esq.

7.—*Committee of Papers.*

The Members of the Council.

he President said that he has much pleasure in laying before meeting the report of the auditors, appointed at the last meeting, audit the accounts of the Society for the past year. The accounts (Appendix pp. xvii &c.) have been found correct, and the Society under great obligation to Messrs. Stewart and Peterson, who had so getically taken up the work entrusted to them. On the proposition the chairman a vote of thanks was passed to Messrs. Stewart and Peterson.

he receipt of the following communication was announced—

Notes on a short trip into the Patkoi Range, by H. L. Jenkins,

Short Notes of a trip into the hills south of Sibsangor, by A. C. Esq.

Tabular statement of 30 years' rainfall by Bábu Gopináth Sen.

A copy of a Journey to Kashgar in 1858, by Captain Valikha, translated from the Russian by R. Michell, Esq., F. R. G. S., from the Government of India, Foreign Department.

he following papers, some of which had been postponed from previous meetings, were then read.

Descriptions of marine shells from Ceylon, &c.; by Messrs. and H. Nevill—communicated by Dr. Stoliczka; (Abstract).

he species described in this paper are of very great interest; they chiefly small shells which up to this time had perfectly escaped the notice of former observers and collectors in Ceylon. The *Prosobranchiate Mollusca* are represented by a species belonging to the family *Uridæ*, several small species of *Trochidæ* &c., the *Dicrano-branchiate* division by species belonging to the genera *Fissurella*, *Emarginula*, *Macrochisma*, &c. The last forms are always considered to be the best shells, and conchological science is greatly indebted to the authors of this paper for their untiring zeal in especially elucidating these as little known molluscos forms of our Eastern seas. The fauna of Ceylon will thus receive further additions through the following new species.

Lapana bella, *Clanculus Ceylonicus*, *Euchelus Seychellarum*, *Gibbula montiana*, *G. Blanfordiana*, *Gibb (?) subplicata*, *G. Stoliczkana*, *Urbis* (n. sub-g.) *roseola*, *Pisulina* (n. sub-g.) *Adamsiana*, *Emarginula papilionacea*, *Em. capuloidea*, *Sub-emarginula Oldhami*.

ana, *Solarium impressum*, *Fissurella scrobiculata*, *Fiss. canalifera*, *Macrochisma scutiferum*. It is to be hoped that figures of all the species can be given to accompany the descriptions.

All the type-specimens described in the paper were exhibited at the meeting.

II. *Notes on the geology and physical features of the Jaintia hills*; by Captain H. H. Godwin-Austen, F. R. G. S.—communicated by Dr. Stoliczka. (Abstract.)

The geological formations, noticed in the present contribution, in general correspond with those described by the same author in his paper on the geology of a portion of the Khasi hills, (printed in the first number of part II, of the Journal, Asiatic Society, Bengal, for this year.) The oldest rocks exposed are metamorphics of great variety and extent; they are overlain by sandstones which most probably are of cretaceous age, and in some places contain seams of valuable coal. On these sandstones rest locally nummulitic limestones, sometimes overlain by a very fossiliferous ferruginous rock of still younger tertiary age. Some of these tertiary deposits appear to be the equivalents of the Sivaliks, so well known through their rich fauna of fossil Vertebrata. Special notice is also given of the Nummulitic coal occurring at Lakadong, which is believed to have been formerly worked. Captain Godwin-Austen expresses the hope, that further investigations may bring to light a much larger geographical distribution of the various coal beds.

In the Jaintia district proper granites, quartzitic and trap rocks are, however, of greater extent than the other formations. Among the physical features of the ranges are especially noticed the regular forms and equal heights of the various peaks, and the parallelism of the drainage lines.

Dr. Stoliczka further stated, that there is another interesting paper, by Captain Godwin-Austen, on the list for to-day's meeting; it treats on some new species of Indian *Diplommatinæ*. Since the paper was sent in, the author, however, requested that it may be postponed, wishing to add some more species of the same genus, only very lately discovered in the Cachar hills. There was no more time to bring Captain Godwin-Austen's request before the Council, but the postponement will no doubt be granted, and he would, therefore, defer the reading of the paper.

With reference to the geology of the Jaintia hills, Col. Strachey asked, whether any of the fossils which have been found in the Nummulitic limestones of Assam and the Eastern Provinces of Bengal, were identical with those of the Western Himalaya, as for instance near Subathoo.

Dr. Stoliczka said that of those species of fossils which he had the opportunity to examine from Assam, there were about 80 per cent. of them identical with those found in similar beds in the North-west Himalayas, the Salt-range and Sind. In fact there is a remarkable similarity to be noticed in the fossils of the nummulitic series from India through Persia, Asia Minor, Transylvania up to the Carpathian Mountains. A large number of the same species of *Nummulites*, the same *Conoclypus* and others are met with throughout. There are, however, above the Nummulitics in Assam, more recent sandstone beds which contain a perfectly different marine fauna, probably representing similar beds which appear to be more extensively developed in the adjoining province of Burma.

III. *Contributions to Indian Malacology*, No. X.—Descriptions of new species of CYCLOPHORIDÆ, and of the genera *Ennea* and *Streptaxis* from the hills of Southern and South-western India; by W. T. Blanford, Esq., F. G. S. &c., (Abstract).

The new species described are entirely from the hills of the South-western and Southern portion of the Indian Peninsula, and the majority belong to the operculated land shells. The greater number have been discovered by Captain Beddome, to whom is due almost all that is known of the Mollusca, inhabiting the hill ranges south of the Pulneys. Three species are from the collections made by Rev. Fairbank on the Pulney Hills, from amongst which I have already described two species of *Diplommatinæ*, both belonging to the group peculiar to the Indian Peninsula.

The first 3 shells belong to a new subgenus of *Cyclophorus* which I propose to call *Ditropis*, from two strong keels which occur in all the species. Some species have more, but all have these two keels, one at the periphery, the other basal, separated by a smooth space. This is of course an unimportant character by itself, though it appears to be constant. The other peculiar characteristics of the type are the vitreous structure and the thick operculum with rough free edges to the whorls externally. The forms appear quite isolated, and although

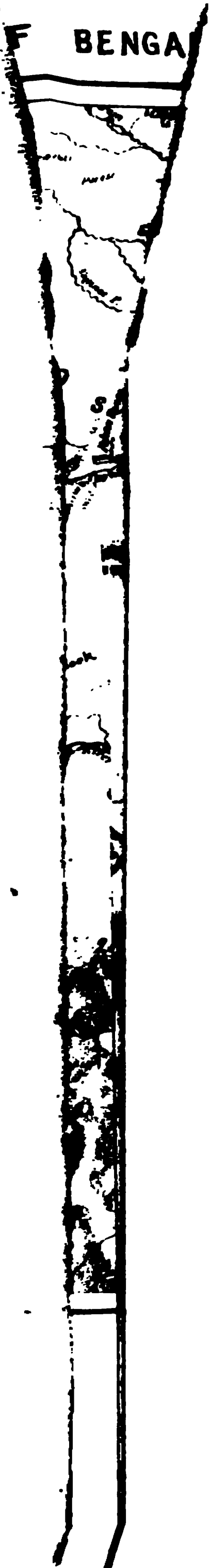
I doubt, if the characters justify a generic separation from *Cyclophorus*, they certainly shew that the shells belong to a very well marked and peculiar group. All are from the hills on the borders of Travancore.

The next two species appear to me to differ so much from all known forms, that I see no other plan of classifying them, than to found a new genus. They are small turbate shells with a thick hairy epidermis with strong crenulation inside the mouth. The operculum is very similar to that of the Bornean and Siamese genus *Opisthoporus*, the shell of which, however, is very different, and I am inclined to consider the similarity in the operculum accidental. The peculiarity of the operculum consists in its being hollow, not solid, formed of two thin disks united by a spiral lamina coiled at right angles to their planes, the spaces between the whorls of the lamina being hollow. From this character I propose to call the genus *Mychopoma*. It approaches very closely to *Cyathopoma*, and perhaps should rank as a subgenus, but the structure of the operculum is different. This opercular structure, though, has not the importance, amongst the CYCLOPHORIDÆ at all events, which some naturalists are inclined to attribute to it. Of the two species discovered, one is from the Pulney Hills, the other from the frontiers of Travancore.

The next shell is a new *Spiraculum*, the first met with in Southern India. Four or five species are known though some of them are undescribed, from the countries east of the Bay of Bengal, and a few years since I described one discovered by Captain Beddome near Vizagapatam. The present discovery, one of Rev. Fairbank's, shews the existence of another genus with decided Malay affinities in the hill ranges of Southern India.

A few years ago when Sir Emerson Tennant wrote his very interesting work on Ceylon, one of his principal arguments for the distinction of the fauna from that of India was the absence in India of several genera, then believed to be peculiar to Ceylon. Amongst these were *Cataulus* and *Tanalia*. Captain Beddome has now discovered no less than 3 species of *Cataulus* in the hills south of the Nilghiris. One has been described by Dr. Pfeiffer from Captain Beddome's specimens, two of which found their way in Mr. Cuming's rich collection, now in the British Museum; a second from the ranges on the frontier of Travancore I now describe, and I have heard from Captain Beddome

F BENGAL





of his discovery of a 3rd species. Rev. Fairbank has re-discovered the peculiar *Tanalia stomatodon* of Mr. Benson in the Pulney hills, and the operculum shews that the species really belongs to the genus to which it was, with some doubt, assigned by Mr. Benson. *Aulopoma* amongst the operculated land-shells, and *Acavus* amongst the *Helices* are the only Ceylonese forms still not known to be represented in Southern India.

Captain Beddome has also discovered a third Indian species of *Opisthostoma* in the Wynaad, and this very curious form is much larger than the two previously discovered, and even than the singular Lubuan *O. Crespigni*, H. Ad. The other shells described are a species of *Ennea* allied to *E. Perriei*, Pfr., from the Pulney hills, and a new and curious *Streptaxis* from Canara.

IV. *Notes on the Burmese route from Assam to the Hookoong-valley*, by H. L. Jenkins, Esq.,—communicated, through H. Goode-nough, Esq., by the President. (With a map).

Wishing to satisfy myself as to the practicability of opening out the old *Burmese route from Assam into Upper Burmah, I started on the fifteenth of last month from Makoom, the last outpost in that direction, and travelled along the old path as far as lake Nonyang, on the south side of that Patkoi range. The following notes of the trip may perhaps prove interesting to persons connected with Assam.

15th December.—Started from Makoom in the morning. There is no road eastwards or southwards beyond this point, except the natural bed of the Dehing river. It is necessary to cross the river at every bend. This is not difficult at this time of the year. There is not more than two or three feet of water at the outside. Encamped at night at the mouth of the Terap river.

16th.—Continued to travel up the bed of the Dehing and camped at night at a small Singfoo village, a short distance below the Kerrem-pani, an affluent of the No Dehing river.

17th.—Reached the new Beesa of the maps. Bunka, the most influential chief of the Assam Singfoos lives here. He accompanied me across the Patkoi.

18th.—Camped at night at the mouth of the Dion-pani, another affluent of the No Dehing.

* See Wilcox's Survey Maps.

19th.—Continued up the Dehing and camped at night at the mouth of the Namchik river.

20th.—Above the confluence of the Dehing and Namchik rivers, the main river is called Namroop. This day we travelled up the Namroop, and camped a little below Sunkaph Purbut.

21st.—Continued up the Namroop, which here runs through a narrow gorge between Sunkaph Boom* and Miting-koo. Camped at night at the mouth of a small stream called Namgoi.

22nd.—As I found much time was lost in dragging my two small canoes over the rapids, I resolved to leave them behind, and loading my baggage on my elephants marched up the stream of the Namroop, till I reached the Namphook village, which consists of eight Singfoo houses.

23rd.—As this was the last village I should see, it was necessary to lay in a stock of provisions. This day was spent in bargaining for rice and in arranging with the able-bodied men of the village to accompany me as guides. I had some difficulty in arranging with these men. It was necessary that they should consent to act as porters if required, and Singfoos have a particular objection to carrying loads for other persons.

24th.—Started from Namphook village, course due south across the Namroop over some hilly land, covered with forest, two hundred feet higher than the bed of the river. After a two hours' walk, we came again on to the Namroop and waded up its stream till the evening, leaving the bed of the stream now and then at the bends of the river, in order to keep as straight a course as possible. Both banks of the river were covered with a forest of immense timber trees, and underneath the larger trees was a rank growth of jungle through which we could not have made our way, except for the tracks of wild elephants. Along these tracks, when it was necessary to leave the bed of the river, we could walk, and with a little cutting of the creeping and climbing plants, the ponies could be made to follow very well, but the tracks were neither high enough nor broad enough to admit of elephants with their loads passing along them, so I sent back my elephants to the village taking on as little baggage as possible, partly carried by the Singfoos and partly by the ponies. The Namroop was for the

* In Singfoo, boom is a mountain, koo a hill.

most part shallow, but occasionally we came on deep pools of very clear water. The quantity of fish* in these pools is astonishing. The Singfoos speared a great number during the daytime. Camped at night on the banks of the Namroop.

25th.—Continued our march. up the Namroop, much in the same manner as on the previous day. Striking occasionally into the jungle to avoid going out of our course which was still south, until we reached the mouth of a small stream, called Nambong, when we left the Namroop and waded up the Nambong to the mouth of a still smaller stream. Up this latter stream, the Nunkee, we travelled till evening and encamped on its banks. The country during the early part of the day was undulating and gradually became hilly. The principal rock was a soft blue slate. Occasionally a thin seam of sandstone appeared. The strata were faulty and in some places very much disturbed.

26th.—Continued to wade up the Nunkee with slow uncertain steps, for the bed of this stream is composed of large round slippery boulders. After travelling about an hour up the stream, we left it and commenced the ascent of the Patkoi, by a narrow and not very well marked path. The ascent was not steep, the ponies had no difficulty except when we came to a fallen tree or some other obstruction caused by the living jungle. The path was very nearly straight, there was hardly any attempt to lessen its steepness by altering the direction. As we ascended, the forest trees seemed to improve in size and the undergrowth of jungle to be less thick. Of the timber trees common to Assam, I particularly noticed the Sam† and the Mekahi. These trees average at least twelve feet in girth, and the latter grows to the height of sixty to seventy feet without a branch. On the summit I found a good deep soil covered with bamboos, canes, and forest trees growing luxuriantly, but not so rankly as in the plains below. Many of the plants and trees were common to the plains, others were new to me, particularly a cane bearing an edible fruit, which I do not recollect having seen before. I found the Tea plant abundant on both sides, but more plentifully on the southern than on the northern slope.

* If this route is opened out, the immense quantity of fish in all these rivers may prove of economical importance. The most numerous are *Cyprinus* (*Labeo*) *dyocheilus*, *Barbus macrocephalus* and *Barbus hexagonolepis*.

† *Artocarpus chaplasha*.

The Singfoos gathered the leaves and commenced to prepare tea after their own fashion. They told me that tea was to be found in the jungle near any spot where there had formerly been a Shan or Singfoo settlement.

As far as I could see, there is a depression in the Patkoi range at this point, and it is to be supposed that the Burmese would not have selected this for their main route to Assam, unless it had possessed considerable advantages over every other path.

The present path rises probably from 2,500 to 3,000 feet, but to cross the range with a road, it would certainly not be necessary to rise more than 2,000 feet.

On the Assam side I could see little but the tops of the hills below me, on account of a heavy fog, but southward the air was clear and I had a very fine view of the country. The most striking object on the Burma side is a large open plain dotted with a few trees, some eighteen or twenty miles long by seven or eight broad. At the western end of this plain, and almost immediately beneath the Patkoi is an open sheet of water, perhaps three miles long and exceeding a mile in breadth called Nonyang* by the Singfoos. The lake stretches nearly from east to west. It contains a triangular shaped island near its south-east extremity where its waters are drained off by a small stream called Loglai which running southwards falls into the Sooroong, and this latter river falls into the Denai or Kyundween of the maps. The Kyundween, it is well known, falls into the Irrawady, or Milee, as the Singfoos call the great river below Ava.

After examining the lake and satisfying myself that its waters did run southwards through the Loglai, I returned to the top of the Patkoi and encamped there. I was anxious if possible to get a view of the Assam side, so as to gain some idea of the best line of road to Makoom.

The nearest of the Hookeong villages are on the banks of the Sooroong, lying under a hill called Gadak which was pointed out to me and which appeared to be about twenty-five miles south of Nonyang, as the crow flies. In the evening two Singfoos came into our camp from these Sooroong villages, and I learnt with surprise that they had slept two nights on the road since they left their homes.

* Non, a lake; yang, the name of a Shan chief, who held this post for the Burmese.

They had travelled up the bed of the Sooroong and then up the Loglai. The devious course of these streams, and the difficulty of wading over shingle and boulders, must account for the slow progress made.

The villages on the Sooroong, they informed me, did not number more than fifteen houses and that very little rice would be procurable. From their villages to the Denai is a two days' march through forest. They described the country on each bank of the Denai as well cultivated and thickly populated. From the Patkoi to the Denai, the path did not lie over any steep hills.

The Singfoos who accompanied me, had only agreed to take me as far as Nonyang, and I failed to induce them to go further south with me. It was their busiest time of the year. The only crop they grow was being reaped, and they could not afford to lose any more time in securing it.

It will be seen that the only difficulties to be encountered on the road between Assam and Hookeong are caused by the denseness of the jungle. The intervening country is a wilderness consisting of a forest of many useful timber trees of immense size. Below the larger trees is a tangled mass of smaller plants, most of them climbers twisting about the larger trees and wrestling with each other in an intense struggle for life. The only paths by which man can move are the natural beds of rivers or mountain streams. It would be impossible to leave these channels, except for the tracks made in the jungle by herds of wild elephants. Progress along such paths is very slow, and the distance to be travelled very much increased, owing to the necessity of often following the windings of the streams.

The Burmese government in former days took care that there should be a village, or rather a military settlement, every twelve or fifteen miles along the route, and it was the business of the people, living at these stations, to cut the jungle occasionally, and to remove fallen trees and other obstructions from the path. The route has now fallen almost entirely into disuse on account of the posts having been one by one deserted since August last. Only three trading parties have come this way from Hookeong into Assam. Traders now usually travel by a more circuitous and very difficult path through the Naga hills, passing from one Naga village to another, so as to

obtain supplies. It is to be wondered at that the Namroop route should be used at all by traders, considering that each man must carry fifteen pounds weight of rice for his own consumption on the journey, besides his load of goods; but the Moolooks, Singfoos and Dooannahs are not hill men, and to avoid climbing the steep scarps which the Patkoi presents at every other point, they form depôts of provisions along this route much in the same manner that the later Arctic explorers have adopted in their expeditions on the ice. They carry forward rice and bury it at convenient intervals along the road, and then return for their loads. What is wanted is about ninety miles of road from Makoom to the Kyundween. There is a sufficient amount of Naga and Dooannah labour to be obtained in the neighbourhood for the construction of an ordinary "cutcha" road, and the cost of it would not exceed one thousand Rupees per mile. Such a road would enable the trader from Hookoong to reach Makoom in one-third the number of marches that the journey now occupies, and it would render an examination of the country easy, and thus pave the way for a more scientifically constructed road, or a Railway.

On my return I fell in with a party of eight men returning to Hookoong. They had brought over amber ornaments, ivory and daos for sale. Two of the party were taking back about thirty yards each of the poorest description of calico* and another had some sulphur. The rest had invested in opium.

These men assured me that there was more than one well used trade route through Hookoong, and through the Sepahee Singfoo country, to Tali and other places in Western China. The question of opening up China to India is of so great importance, that it is not likely to be lost sight of, now that it has once attracted attention, but the magnitude of this subject should not make us pass over the value of improving the communication between the Burhampooter and the Kyundween. The great want of Assam is population to cultivate the soil. We can obtain labourers from Bengal, but we have also to great extent to import their food and this in a notoriously fertile country.†

* I am not sure about the name of this cloth. It is composed chiefly of starch with a small portion of cotton to give toughness to the fabric. It is never seen in any civilised place, but the Manchester manufacturers know well how to suit savage customers who must have cheap clothing, and do not wash their clothes.

† The ground is cropped year after year and no manure is used, yet the yield is on the average about 45 cwt., of paddy to the acre.

That Bengalis have not settled to any extent in the province, is no doubt a good deal owing to the illiberal policy of Government with respect to the selling or leaving of wastelands, but it is also in part owing to the fact that the climate does not suit most Bengalis on their first arrival in the province. If Assam is to be re-populated, it will be from the East. That the existing population has been mainly derived from this quarter, is shewn by the language, customs, and physical appearance of the people. At the present time, the Phakial Dooannah and Singfoo population is increased annually to a small extent by the influx of emigrants from Hokoong and the Shan states. That people do not come in greater numbers is, I believe, entirely owing to the hardships that persons, reared in a cultivated country and unaccustomed to the jungles, must encounter on the road. It is said that numbers of persons who leave Hokoong for Assam never arrive here. They lose the path and wandering about in the jungles starve to death, or are killed by wild animals. I do not know what difficulties there would be in obtaining a right of way from the Burmese government, but through considerably more than half the distance the road would lie in British territory, and the opening up of a road only as far as the watershed of the Patkoi would prove of no small value to the province.

Debrooghur, 12th January, 1869.

The Chairman said, Mr. Jenkins' notes just read, were very interesting and valuable, as bearing on the geography of a part of a country, almost entirely unknown. Even so lately as last year, Mr. Cooper, whose adventurous journey in China they had all been interested in, when speaking of the routes leading to Assam, &c., from the western part of China, notices this Patkoi range, as being something very difficult to cross, and as being still a great barrier to be overcome, supposing the intervening country had been passed. Mr. Jenkins now shows that in a trip of only a few days, and without any real difficulty or danger, and without a greater ascent than (by estimation) 3,000 feet, he had been able to cross the same Patkoi range, and to get down on the Burmese or Chinese slope. Mr. Jenkins also thinks that if a path or road were opened out, it would not be necessary to go over greater elevation, than probably 2,000 feet. The question of the source from which a removal of the population of Assam is to be sought, is a not unimportant one ; and it does

seem probable, that considerable immigration from Burma might be looked for, if an easy means of communication were opened out. Mr. Goodenough, who had been good enough to forward to him Mr. Jenkins' notes, had also sent him a sketch map, on which he had marked Mr. Jenkins' route; and on which he had also shewn the routes of Wilcox, of Griffiths, of the recent expedition under Capt. Sladen to Momein, of the French expedition which had recently completed its course at Shanghai; and also the furthest point to West, to which Capt. Blakiston had reached. This general map would give an idea of the relative position of the areas explored by these expeditions, and would also shew the large area of country, the geography of which was still very little known. It was scarcely creditable to the British Government that this should be so; and every little addition to our knowledge of the geography of this area was very acceptable. He thought they owed their best thanks to Mr. Jenkins and Mr. Goodenough, for the communication of these notes.

The reading of Mr. Peel's paper *on the hill tribes south of Sibsau-gor*, was postponed for the next meeting.

Col. Strachey then spoke of a remarkable stroke of lightning during the recent storm; a house having been struck, apparently from the side, on the corner opposite to the one the conductor was placed at. This was probably owing to the moisture with which the walls of the house were saturated. The fact does not, however, speak very favorably for the use of our lightning conductors.

The Chairman announced the new election of members and the meeting separated.

LIBRARY.

The following additions were made to the Library, since the meeting held in January.

Purchase.

- The Annals and Magazine of Natural History, Vol. II. Nos. 1 and 2.
- The Calcutta Review, January, 1869.
- The Numismatic Chronicle, 1868, Part III.
- Revue linguistique, 2nd tome, fasc. 2nd.

Exchange.

- The Athenæum, October and November, 1868.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MARCH, 1869.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 3rd instant, at 9 o'clock P. M.

E. C. Bayley, Esq., in the chair.

The minutes of the last meeting were read and confirmed.

The following presentation was announced—

1. From the Government of India, Home Department, 24 bronze medals, executed at the Calcutta Mint.

The following gentlemen are candidates for ballot at the next meeting—

E. D. Lockwood, Esq., C. S., proposed by Lieut. R. C. Beavan, seconded by Dr. J. Anderson.

M. L. Ferrar, Esq., C. S., proposed by Mr. H. Blochmann, seconded by Dr. F. Stoliczka.

Moulvie Kabeeruddeen Ahmad, proposed by Mr. H. Blochmann, seconded by Dr. F. Stoliczka.

Dr. F. Day, Madras M. S., proposed by Dr. J. Anderson, seconded by Mr. H. Blochmann.

Rev. C. Haberlin, Chota-Nagpore, proposed by Mr. H. Blochmann, seconded by Dr. F. Stoliczka.

Col. H. Hopkinson's desire to withdraw from the Society was recorded.

The President said he had much pleasure to announce that His Excellency Earl Mayo has been pleased to accept the office of Patron of the Society.

The following papers were read—

I.—*Short notes of a trip into the hills south of Sibsaugor ; by A. C. PEEL, Esq.—communicated through Dr. J. ANDERSON, by Dr. STOLICZKA. (Abstract.)*

Mr. Peel in company with Mr. Wagentreiber, Junior, accepting an invitation from the Rajah of Banparas, started on their trip on the 30th of May last year. The usual difficulties of mountain travelling were soon felt, the road passing to a great extent through jungle, generally along streams ; and the path soon became so narrow that not more than one man could pass on it at the time. The amount of waste land was also very large, scarcely 1 per cent. of the area appearing to have ever been under cultivation, though in most places the land was well situated. The rock was mostly sandstone, but many quartz pebbles were to be seen in the bed of streams.

Wild elephants appeared numerous. They are caught in traps, these being deep excavations in the ground, wider below than above, supplied at the bottom with numerous bamboo spears, and covered over with branches of trees and grass. These traps are generally constructed on narrow passages of the road. Wild pigs and various deer were observed in large numbers. Very remarkable was also the quantity of fish in all the streams, but unfortunately the Nagas sometimes use poison to catch them, and thus destroy often more than required to satisfy their wants.

The party of travellers was met by the Rajah's brother, who soon was joined by the Hoondekai and the Lowdong. The latter is the name of an official who travels in the name and the authority of the Rajah, the former designates an official who represents the Rajah at home. After a march of the first few miles the road became so difficult, that the elephants had to be sent back ; and the journey was prosecuted on foot. The village Lowghong was soon reached, and with the permission of the Khoonsai, or the head man of the village, the party visited the same. Only a very small portion of the land was under cultivation and the same ground is seldom cultivated for more than two successive years, a fresh piece of forest being generally every two years burnt down for the purpose of cultivating the *dhan*. The village was partially surrounded by a ditch, 6 feet wide by 6 feet deep, and fenced by bamboo sticks ; besides this there were watch-houses and other kind of fortifica-

tions. A custom seems to prevail here to expose the bodies of the dead on raised bamboo stands, roofed in with Jaroo palm-leaves. Each village has its Jack trees (*Artocarpus integrifolius*) with which its whole history is usually connected, some of the trees appearing to be from 300 to 400 years old. From the highest point of the village a magnificent view into the surrounding hilly country could be obtained, especially in the districts occupied by the Hooroo Mootoons and the Bor Mootoons; those of the Neyowloong Nagas were also distinctly discernible.

From Lowghong the party returned to the place where they left the Khoonsai of the village, and proceeded westward, until they reached the river Sisa, where they camped for the night. Next morning the 31st May, the journey was continued, first in a westerly and afterwards in an almost due northerly direction towards Banpara. The path was at first very steep and up a ferny cleft; it, however, soon became more level, passing round the shoulders and along the ridges of a series of small hills, tolerably level in the main and at sufficient height to give a good view. At about half way to Banpara the party came to a place that could be easily defended; it lies on a narrow ridge with a precipice on each side and not more than four or five yards across. The obstruction was commanded by a rise in the ground beyond it, though it could not be seen from any distance. Further on the road was for a short distance cut on the face of a precipice, being only a few inches wide.

Soon after the party came to the village Banpara. It was a similarly built place as Lowghong, being extremely irregular and broken up, the houses all thatched with Jaroo leaves; the jack trees were also large and numerous. The party was conducted to the Rajah's house which was by far the largest in the Chang, and had to be climbed up on a notched tree-stem. The Rajah, a man of about 40 or 45, was seated on a sort of huge stool, about 8 feet high by 5 feet broad, and a similar bench was prepared opposite for the party. Many officials of the Rajah and other visitors of course assembled to witness the ceremony of presentation. The Rajah spoke at first a few words regarding the country and his people, but the confusion, characterised by every one wishing to have a voice in the assembly, soon became general. The party was then requested to perform some miracles,

which were supplied by firing off revolvers, striking matches, &c. A magnet also seemed to yield a great deal of amusement.

The house of the Rajah was then inspected, it was estimated to be about 200 feet long by 50 feet broad, and about 50 feet high. Like most of the other houses it was built two-thirds on a rock, and about one-third continued out level by a platform, supported on posts ; this part was the audience end. Inside it was divided by three longitudinal rows of jack-tree posts, one down the centre, and one on each side. After the greater number of the Khoonsais and Hoondekais had left, the Rajah was prepared to receive his presents, though he appeared to have been rather dissatisfied at not getting one of the guns, or revolvers. A few of the houses in the village were afterwards also visited, but they all resembled that of the Rajah, built only on a much smaller scale.

The Moorroong, or skull house, was next inspected. There were about 850 skulls there, half of them being hung up by a string and the other half lying in a heap on the ground. No lower jaws were to be seen, nor any other parts of the skeletons. The hands and feet are always cut off with the head, when a man is killed, each conferring a different kind of *Ak*, or decoration. It was curious, says Mr. Peel, to be face to face with the great cause of the isolation of the tribes and the constant warfare. It is, namely, a custom of great antiquity, that, all social position depends on *tattooing*, and this decoration can only be obtained by bringing in the head of an enemy. Unless a man can succeed in doing this, he cannot take part in counsels of state, &c. One who gets the head of an enemy secures for himself the *Ak* on the face. Another who gets the hands and feet, when a man of the same party gets different marks accordingly, either on the hands, or on the legs. The worst of this kind of warfare is, that women and children are as often killed as men, and without any compunction. Besides the skulls, the Moorroong also contains the big drum which is cut out from a tree stem. It is beaten by short heavy sticks and can be heard at a distance of from six to seven miles. Slavery seems to be a common custom among these people, the captives of enemies being generally retained as slaves.

The return journey was performed along the same road, and it did not occupy more than ten hours, the whole distance being about 24 miles.

Mr. Peel suggests that potatoes and other vegetables could be introduced into those hills with great success.

The Banpara tribe consists of four villages, and the mean of several Assamese and Naga estimates of the number of houses given, is as follows —

Banpara,	300 houses.
Lowghong,	200 „
Oonoo,	350 „
Nokorong,	50 „
<hr/>	
Total, ...	900
<hr/>	

Mr. Peel is, however, inclined to think that 600 houses will be nearer the mark, and that there are about 1200 able-bodied men. The Joboka-Nagas have 5 villages with about 1200 houses and about 2000 able-bodied men ; the Mootoons occupy 4 villages. Mr. Peel further notices the various weapons used by the Banparas ; the spears, axes and bows are of the usual form used by the Naga inhabitants of these hills. No trade seems to exist between these hill tribes and the inhabitants of the plains. With the exception of a very small quantity of sat, and a few other things exchanged for rice, almost nothing is brought down.

In conclusion Mr. Peel gives a short account of the occurrence of several seams of coal in the lower hills south of Sibsanger. Some of the coal appears to be of very good quality, judging from the conchoidal and glittering fracture of the samples obtained. A short vocabulary of the Naga language is also added.

The paper is accompanied by a series of beautiful coloured sketches, illustrative of the character, habits and customs of the people, and of the general character of the country.

II.—*Further notes on Chand's poems ;* by F. S. Growse, M. A., C. S.

The President read the greater part of this paper, which will be shortly published in the first number of the Philological Part of the Journal.

Mr. Blochmann said that the paper just now read by the President was the second paper on Chand, with which Mr. Growse had favoured the Society. Mr. Growse conferred a benefit on Oriental scholars by

giving translations of extracts, as Hindí poetry was extremely difficult. He had lately had a letter on this subject from Professor Brockhaus of Leipzig, who expressed the same wish as Professor Garcin de Tassy had done in his last 'Discours,' that the Society should print translations from Hindí, because very few scholars in Europe were able to understand Hindi poetry, though there might be many who spoke Hindustaní with fluency.

He therefore hoped Mr. Growse would continue his contributions.

III.—*Notes on the Arabic and Persian Editions of the Bibliotheca Indica*, by MR. H. BLOCHMANN.—*No. I. Badaoní and the Religious Views of Emperor Akbar.* (Abstract).

Mr. Blochmann said :—

This paper is the first of a series of Essays on the works printed by the Society in its *Bibliotheca Indica*. The essays are intended to collect all the information which we possess regarding the authors of our editions, their writings, style, &c., and to give translations of interesting extracts, accompanied by philological notes.

The work which I have reviewed in this paper, is the most remarkable history of Akbar's reign, by Mullá 'Abdulqádir ibn i Mulúk Sháh of Badáon. This history is written in a spirit hostile to Akbar and his ministers, and was therefore concealed by the author and his children during Akbar's lifetime. This book was, however, discovered towards the end of Jahángír's reign. It is valuable for the biographical notices of learned men and poets of Akbar's age, as also for the detailed information which it gives on Akbar's religion.

I shall now read an abstract containing a few summary remarks on *Akbar's Religion*.

The religious opinions held by men of historical importance, present many interesting features. They concern the inner life of the hero, and disclose the motives of his deeds. Hence biographers find it a profitable task to dwell on this subject, especially when it is possible to trace the circumstances which led their hero to modify or reject the religious views in which he had grown up.

That the greatest Muhammadan emperor, which India has produced, should have openly abjured the Islám, and established a new church, is a remarkable fact, and would scarcely be credited, if we had not

the testimony of three historical works, whose authors widely differ in character and opinions.

These three works are the *Akbarnámah* by Abulfazl, Akbar's Prime Minister, and especially its last volume, which is best known under the name of *Aín i Akbarí*; secondly, the *Muntakhab ul Tawárikh*, by Abdul Qádir of Badáon, who held an office at Akbar's court; and thirdly, the *Dabistán ul Mazáhib*, a work written about sixty years after Akbar's death by an unknown Muhammadan writer of strong Pársí tendencies.

We may also add the valuable testimony of Portuguese Missionaries whom Akbar called from Goa, as Rodolpho Aquaviva, Antonio de Monserrato, and Francisco Enriques, &c., of whom the first is also mentioned by Abulfazl under the name of *Pádrí Radalf*—not *Radíf*, as bad MSS. spell his name.

From the abovementioned three works, we gather the following leading facts regarding the *Divine Faith*, which name Akbar gave his new religion.

Akbar's secular and religious education had been entirely neglected, owing to political circumstances. Being surrounded by Hindu servants, when young, and married to Hindu princesses, when scarcely of age, he came into close contact with Hindu forms of worship, which were openly practised in the harem of his father and in his own. Thus a strong attachment to Hinduism grew up in Akbar's heart. To judge from Badáoní's remarks, the influence of the Hindu portion of Akbar's harem, which contained above 5000 women, was very great, and was no doubt the principal reason for Akbar's apostacy from the Islám.

Akbar's early wars, from 1556, when he was in his fourteenth year, to 1574, did not allow him sufficient leisure to take up religious questions, or to supply the deficiencies of his secular education. But Akbar felt the want. A change, however, took place towards the end of 1574, or 982 A. H., the eighteenth year of his reign, and the thirty-first of his life. "No political opponent was left on the field," and the years from 1574 to 1581, which Akbar spent at Fath-púr Sikrî, were comparatively peaceful. Immediately before 1575, Akbar entertained, and openly expressed, doubts regarding the correctness of several points of the Muhammadan religion. He also

shewed a slight dislike to the 'Ulamás and the Mullás, the learned and the lawyers, whom he thought somewhat conceited, whilst he manifested a sincere regard for really pious men and Çúfís, especially for such as lived in voluntary poverty. Of the tenets of Hinduism, he was particularly attached to the doctrine of the transmigration of the soul. According to the testimony of his enemies, he then possessed a sincere heart, and was anxious to discuss certain tenets of the Islám. For this reason he invited the learned and the lawyers of various sects to meet him every Thursday* evening. These meetings however, produced the very opposite of what Akbar wished. The 'Ulamás, in the very beginning, quarelled about precedence and rank; the discussions were carried on in a bitter spirit, and even in violation of all rules of *decorum*. As both Shi'ahs and Sunnís were present, every question was made a party cry, and the difference of their opinions regarding some Islamitic laws was most remarkable. Akbar, instead of profiting from the 'Ulamás, learned daily more to despise them; and judging the Islám by his conception of the character of the 'Ulamás, he ceased to look upon the religion of the prophet as the only true religion, and, shortly after, assigned to it a very inferior rank among the religions of the world.

Another proof of the emperor's sincerity is the zeal which he shewed in collecting information regarding other religious systems. He spent whole nights in conversation with free-thinking Çúfís; he called Pársí priests from Gujrát, and Roman Catholic Missionaries from Goa, whilst acute Brahmins led him into the mysteries of Hindu philosophy. After making himself acquainted with the tenets of these religious systems, Akbar came to the conclusion that there were in every sect sensible men, and that it was, therefore, improbable that truth should be confined to one single religion, especially to a religion like the Islám, which had not existed a thousand years.

This conclusion led to two important results:—*first*, it convinced Akbar of the necessity of perfect religious toleration; and *secondly*, it induced him to think that truth might be found by selecting, from among the tenets of all religions, those doctrines which recommended themselves to his calm understanding.

* Not Friday evenings, as given in Elphinstone's History. *Shab i jum'ah*, or Hind. *jum'ah kí rát*, is Thursday evening.

In his opinion of the Islám, Akbar was also influenced by several of his courtiers, as Hakím Abulfath of Gilán, who came to Fathpúr Síkrí in 1575, Mulla Muhammad of Yazd, and Mir Sharíf of Ámul, who arrived in 1576. They were Persian Shí'ahs, the two former very bigoted, the third a man of no principles. Of Brahmins, three are generally mentioned—Purukhotam, Débí, and Bír Bar. Among the Çúfis, Akbar esteemed most Shaikh Tájuddín of Dihlí, upon whom people looked as the greatest Çúfí then living, though his speculations often wandered from the path of religion. Of Hindustání Sunnis, the most important were Shaikh Mubárik of Nágor, and his sons Faizí, the second greatest poet of Hindustan, and Abulfazl, Akbar's famous minister. They were waiting to see to what religion Akbar would turn; and in the meantime successfully tried everything in their power to increase Akbar's dislike to the 'Ulamás and the Islám in general. Abulfazl, who had been introduced at Court in the beginning of 1574, owed his success to his argumentative skill, and was immediately fixed upon by Akbar as the man who could teach the proud Mullás a lesson of humility.

Akbar's dislike of the learned and the lawyers, and their constant defeats at the Thursday meetings, lessened considerably the authority of the Chief Justices of the Empire, and might have produced serious difficulties, had not Shaikh Mubárik, by a clever stroke, transferred the interpretation of the law from the judges to the emperor himself. The Shaikh prepared a legal document, for which he got the signatures of Shaikh Ab'lunnabí, çadr of the realm, of Qází Jaláluddín, the Qází-lquzát of the empire, of Çadr Jahán, Akbar's crown-lawyer, and of Makhdúmulmulk and Ghází Khán, the leaders of the 'Ulamás. In this document they declared that, in consequence of the serious differences between the several expounders of Muhammadan law, after due deliberation, they had found it necessary, to ask the emperor to assume the office of *Mujtahid*, or infallible authority of the age, and they had agreed among themselves to refer to him all differences in interpretation, and would hold themselves bound by his decisions for ever.

It is impossible to say whether this curious document was of any practical importance. Akbar publicly assumed the office, and very soon after considered himself the spiritual king of the nation. If it

was Shaikh Mubárik, who had first put the idea of *Mujtahidship* into Akbar's heart, it was his son, Abulfazl, who convinced the emperor of the divine right of kings of ruling as God's representatives on earth, and of being the leaders of the nation in political and spiritual matters. 'Royalty,' says Abulfazl, 'is a light emanating from God, and communicated by God to kings independent of other men. This light teaches kings to understand the spirit of the age, and to regard the performance of their duty as an act of divine worship. Men will find peace in the love of the king, and all sectarian differences will vanish. Let the nation rally round Akbar, and they shall escape the perplexities of this life by worshipping God in obeying the king.'

Several circumstances confirmed Akbar in his plan of guiding the people in spiritual matters. The Islám approached the Millenium, and all looked with anxiety to the year 1000 of the Hijrah, or A. D. 1590-91. Rumours were widely spread of the appearance of *Imám Mahdí*, who, according to the belief, was to appear in the latter days, when the faithful were few on earth. His appearance is immediately to be followed by the advent of Christ, who is to re-establish the Islám on a firm basis. The news of the discovery of the New World, or the *jahán i nau*, had spread from Goa and the Portuguese Settlements over India and Persia, and stirred up the old fashioned notions of men of science. A great comet which was visible in India and Persia during 1577, filled the minds of all with great fear. All agreed that the Islam had lost its lustre; everywhere heretical notions spread, chiefly through Persian adventurers, whom the conquest by the Turks of the north of Persia had driven to the Shí'itic kings of the Dak'hin, or the Sunnis of Bukhárá, and at last to the Hinduizing court at Fathpúr Sikrî; and the decrease of faith on earth made people the more inclined to expect a great religious change.

Akbar's courtiers eagerly seized the opportunity, and pointed to the emperor as the restorer of all things.

One of the first consequences of the above-mentioned document was, that Akbar denied the doctrine of inspiration, the miracles of the prophet, and a future life in as far as it differed from transmigration. The formula, 'There is no God, but God, and Muhammad is his prophet', was, in 1579, openly changed to 'There is no God but God, and Akbar is God's representative on earth.' But as this

formula of the new creed gave much offence, it was at first restricted to the palace. In the same year, the *jazyah*, or tax which Muhammadan kings are enjoined by the Qorán to levy on all infidels, was abolished, after it had been temporarily revived in 1575. A large number also of 'Ulamás were exiled, or deprived of their *jágírs* (*Siyurgháls*) or sold as slaves, or, according to Badáoní, exchanged for Qandahár horses.

In 1580, Akbar appears more distinctly as the head of a new creed. The first order which he issued, defined the limits of obedience of his disciples. They were required to be ready to sacrifice on his account four things, *viz.*, their property, their life, their personal honour, their old belief.

In 1582, the era of the Hijrah was discontinued. Akbar likewise enforced the *sijdah*, or prostration, which the Muhammadan law looks upon as belonging to God, and not to man; and though this order also gave at first much offence, the courtiers got gradually accustomed to it, especially when the offensive word *sijdah* was changed to *zamínbos*, or kissing the ground. Even Badáoní performed it. The sale of wine was allowed, and a moderate drinking of wine was approved of. Playing at dice also was allowed. The use of beef was forbidden at court. The courtiers were ordered to shave off their beards. Written formulæ of confession came into use, which intending members handed over Abuliazl, who now was the Mujtahid of the Divine Faith, as Akbar was God's representative on earth. The confession papers read as follows: 'I, such a one, the son of such a one, declare that I have freely and cheerfully renounced the Islám, in all its phases, whether broad or high, which I have witnessed in my parents, and I hereby join the religion of Sháh Akbar, to whom I am willing to sacrifice property and life, honor and belief.'

Several ablutions commanded by the Muhammadan law were abolished. Pigs and dogs were declared ceremonially pure. Disciples were forbidden to make feasts in honor of a dead person; they were enjoined to prepare a great dinner for the poor during their lifetime. The flesh of the tiger and the wild boar was declared lawful. Marriage with first cousins or still nearer relations was interdicted, because the offspring of such marriages was, as a rule, weakly. No young man was to marry before the age of sixteen, and no girl before fourteen. The

wearing of silk apparel at the time of prayer was permitted. The prayers of the Islám, the fast of the Ramazán, and the pilgrimage to Makka were interdicted. A new era, called the Divine Era, was established, which commenced from Akbar's accession. The months of the year were made Solar, and the old Pársí names of the months were revived. All feasts of the Pársí calendar were introduced. The study of Arabic was ordered to be discontinued, and the reading of the Qorán and Muhammadan law was prohibited. Philosophy, History, Arithmetic and Geometry, Literature and Astronomy were to form the subjects of education. The life of the prophet was openly criticized, and the courtiers vied with each other in relating damaging stories about him, which Akbar received as so many presents made to him. Thus they said, the prophet had openly lived as a highway robber, and plundered the caravans of the tribe of Quraish, to which he belonged; he had married fourteen wives, mostly widows, and allowed the faithful only four; he had claimed the right of possessing any married woman, whom he liked. The Shí'ahs at the same time reviled the first three caliphs, which they look upon as meritorious.

The frequent repetition of the formula, 'Alláhu Akbar' was introduced as a religious exercise. This formula had been used as far back as 1575, on coins, in the commencement of grants, farmáus, and as a heading in books, letters, &c. It recommended itself to Akbar for its ambiguity; for it may mean, 'God is great,' or 'Akbar is God.' Faizí, the court poet, openly acknowledged Akbar to be God. Some of his poems are very clear on this point. Thus he says in a rubá'í :—

“ If you wish to know the right path, as I now know it,
Remember that, without the Sháh, you cannot know it.
Mere prostration is of little use,
Know Akbar, and you will know God.”

Mullá Sherí also, whose poems contain satirical remarks on the New Creed, alludes to a possible apotheosis. He says in a qaçídah :—

“ This year the Sháh has been raised to the dignity of a prophet,
Next year, if God's will be done, he will be made a god.”

In the same year the courtiers urged Akbar to use the sword, in order to propagate his new faith, and referred to the success of the Çafawí kings of Persia, who had firmly established the Shí'itic form of

the Islám by means of the sword. But Akbar was too wise to attempt this mode of conversion, though he reduced many an old Sunní family to distress by plundering their mosques, or withdrawing their grants, or exiling them.

The *Azún*, or call to prayer, was discontinued at court, and the word *Muhammad* was forbidden to be used in names. Many courtiers changed their names. Translations from Sanscrit, which had first been commenced in 1573, were eagerly pushed on. The *At'harban*, *Ramáyan*, *Mahábhárat*, *Lílawatí*, and the History of Kashmir, were translated into Persian.

In 1583, the killing of animals on Sundays was interdicted, this day being sacred to the Sun, as also during the first eighteen days of the month of Farwardín (February—March), the first month of Akbar's year, the whole month of *Ábán* (October), in which Akbar was born, and several other days, in order to please the Hindus. This order, according to Abulfazl and Badáoní, was extended over the whole empire. Akbar himself abstained from meat for more than half the number of days in the year, and increased the fast days (*çúfiyánah*) from year to year, with the view of gradually giving up meat altogether. Rules of worship for the Divine Faith were issued. Prayers were to be addressed to the Sun in the morning, at noon, at sunset, and at midnight. Sun-worship had been openly practised at court since 1579, whilst Akbar, from his early youth, had taken part in the *hom*, a kind of fire-worship practised by the Hindu women of the harem. During 1579, some Pársís had come from Nausarí in Gujrát, and a fire temple had been built in Fathpúr Sirkí, which was placed under the care of Abulfazl. A Pársí priest of the name of Ardsheer, whom Akbar at great expense had brought from Persia, instructed the emperor in the old rites of the Pársís. To this Pársí we also owe the preservation of many Zand words in the greatest Persian Dictionary of India. In 1580, the order had been given that all courtiers should rise, when the candles were brought into the halls of the Palace. In 1583, one thousand and one Sanscrit names of the sun were collected and the reading of these names was ordered as a means of spiritual blessings. Akbar said them every morning after sunrise, assisted by a Brahmin, and then showed himself to the multitudes that daily crowded round the palace

and prostrated themselves on his appearance. The time of the four prayers was announced by bells and gongs, and the imperial band played hymns, a large number of which Akbar had himself composed. The emperor also appeared in public with the mark which Hindus put on the forehead.

The mosques being now useless, were changed into store-rooms, and into houses for Hindu *chaukidárs*. The cemeteries within the towns were sequestered, as tending to give offence to the Hindus. Several eating-houses were erected for poor Hindus and Muhammadans, and another for Jogís, who promised Akbar that he should live three or four times as long as ordinary men. The Brahmins persuaded the emperor, that he was an incarnated deity, and said that he only played with the people of the world by delaying to assume his real form. They brought at the same time proofs from antique looking manuscripts, containing prophecies regarding a great king who would honour cows and Brahmins, and the courtiers brought predictions of the man of the Millenium, which they said they had found among the poems of Náçir-i-Khusrau, a free-thinking Persian poet of the sixth century.

In 1585, the conversions to the Divine Faith were numerous. In 1587, Akbar ordered, that his disciples should only marry one wife, except in cases of barrenness. Widows were allowed to marry again. Disciples, on meeting each other, should not use old salutations as *salám*, *taslím*, *bandagí*, &c., but one should say, 'Alláhu Akbar,' and the other reply, 'Jalla Jaláluhu' (great is his glory). This was to remind people of God and of Akbar, whose full name was Jaláluddín Akbar. Hindu judges were also appointed to hear all cases between Hindus. People should be buried with their feet placed towards the west, and the courtiers commenced even to sleep with their feet towards the west, a position which every Muhammadan in India considers highly improper, as Makkah lies west of India. In the same year the study of Arabic was prohibited throughout the empire. In 1590, the meat of buffaloes, sheep, horses and camels was forbidden. Hindu women should not be burnt together with their dead husbands, except they did so freely; but soon after Suttee was again permitted without restriction. Circumcision was forbidden before the age of twelve, and boys were then to decide for themselves. No member of the

Divine Faith was to eat or drink with butchers, fishermen, and bird-catchers, on pain of having his hand cut off.

In 1593, Akbar proclaimed perfect toleration, and advised all those to return to their old religion who, from pressure, had embraced Islám.

Abulfazl, in the *Aín*, gives an account of the ceremony of initiation of new members. The initiation took place on Sundays, at noon. The candidate approached the emperor with his turban in his hand. He then put his head on the feet of the emperor. After this, Akbar lifted him up, replaced the turban on his head, and gave him his likeness, round which the following words were written :—

The pure aim and the pure sight never err.

The emperor's likeness, which was called *shaḡt*, or *aim*, was worn by members on their turbans.

As Akbar ultimately believed that he was god, his courtiers were quick enough in supplying the miracles. Abulfazl had the intention of writing a book on Akbar's miracles. Akbar is said to have spoken when he was young, as Christ did, according to the Qorán and the spurious gospel of Christ's Childhood. On one occasion, a wild leopard had fallen into a pit; Akbar took out the animal himself, when it suddenly became as tame as a dog and followed him. On another occasion, a faqír had cut off a piece of his tongue, and after throwing it at the threshold of the palace, sat down on the road, convinced that Akbar would be informed by God of his condition, and heal his tongue. Before it was evening, his tongue was healed. "On such occasions," says Abulfazl, "the eyes of many were opened." But in another passage of the *Aín*, Abulfazl says very clearly that Akbar was obliged to pretend to possess miraculous powers, because the vulgar would have them, but that both Akbar and he himself secretly smiled at the simplicity of the people. It is certain that sick people continually brought cups of water to the emperor, requesting him to breathe upon the water. Such water healed all diseases.

From the Roman Catholic Missionaries, Akbar accepted crucifixes and Madonnas; but they confess that their preaching made no impression on Akbar, who would not allow any one to interfere with his prayers to the sun and the fire. They looked upon him as an idolater. To please them, Akbar in 1579 allowed his second son Murád to take

a few lessons in Christianity, 'by way of auspiciousness,' and the young prince, instead of saying in the commencement of his lesson the Muhammadan formula, 'In the name of God the Clement and Merciful,' was taught to say—

Ai nám tu Jesus o Kiristo,

(O thou whose names are Jesus and Christ !)

Akbar's disciples were chiefly Muhammadans. With the exception of Bír Bar, who was a man of profligate habits, the name of no Hindu member is mentioned, either by Abulfazl or Badáoní. There may have been a few Hindus, because Badáoní mentions that Akbar promoted Hindus on becoming members of the Divine Faith, though he did so rarely in the case of Muhammadans. The old Rájah Bhagwán Dás, Rájah Todar Mall, and Rájah Mán Singh remained staunch, though Akbar tried hard to convert them. Of the Muhammadan members of the Divine Faith, Badáoní says: "They behaved like Hindus converted to the Islám." The following were members:—

1. Abulfazl.
2. Faizí, his brother, Akbar's court-poet.
3. Shaikh Mubárik, of Nágor, their father.
4. Ja'far Beg A'çaf Khán, of Qazwín, a historian and poet.
5. Qásim i Káhí, a poet.
6. Abduççamad, Akbar's court-painter; also a poet.
7. A'zam Khán Kokah, Akbar's foster brother, after his return from Makkah.
8. Mullá Sháh Muhammad of Sháhábád, a historian.
9. Çúfí Ahmad.
- 10 to 12. Çadr Jahán, the crown-lawyer, and his two sons.
13. Mír Sharí of Amul, Akbar's apostle for Bengal.
14. Sultán Khwájah, a çadr.
15. Mírzá Jání, chief of T'hat'hah.
16. Taqí of Shustar, a poet and commander of two hundred.
17. Shaikhzádah Gosálah of Banáras.
18. Bír Bar.

From the year 1593, when the law of perfect toleration was promulgated, our information regarding the Divine Faith gradually ceases. Badáoní's History ends with 1595, and in the next year the greater part of Abulfazl's Aín was completed.

With the death of the emperor in 1605, the Divine Faith died out. Akbar, relying solely on his influence and example, had established no priesthood, and appointed no proper person for propagating his faith. If we except the influence which his spirit of toleration exerted, the masses remained passive. Zealous members, as Mír Sharíf of Ámul, took again to sophistry, as Jahángír did not trouble himself about any religion. The new Emperor retained Akbar's Solar Era, and shews in the phraseology of his memoirs much reverence to solar worship. But during his reign, the spirit of toleration soon changed to indifference, and gradually died out, when a reaction in favour of bigotry and persecution set in under Aurangzeb. But people still talked of the Divine Faith in 1643, when the author of the Dabistán collected his notes on Akbar's religion.

IV.—*Notes from Assaloo, North Cachar, on the Great Earthquake of January 10th, 1869; by Captain GODWIN-AUSTEN, F. R. G. S., Surveyor, Topographical Survey of India,—communicated by DR. STOLICZKA.*

[Received 25th February, 1869—Read 3rd March, 1869.]

I have been led to put together these few notes, taken here during the late period of seismic disturbance (still in action), owing to the great interest taken in such phenomena by every one, and more especially by those with any taste or knowledge of geology, and consequent acquaintance with those terrible convulsions, which in past epochs laid waste and altered the whole face of this globe, and left it in its present form to us. At no time are such past changes brought more vividly to the mind of man, than when viewing the passage of such mighty earth-waves, as have lately flowed under our feet, giving to the crust of solid strata an ominous plasticity. To watch the progress of such mighty efforts for 60 seconds only! terrible is the scene, and thankful may we be, in these days, that they seldom in their full force last longer, or perhaps to put it in other words, that the intervals of time between great convulsions are so enormous. The imagination palls before a serious disturbance of say only a quarter of an hour's continuance.

The earthquake here, though so violent, burst upon us without the slightest warning, a very unusual occurrence, as a rumbling more

or less loud is generally heard a few seconds before. In nearly all earthquakes, I have myself felt, such has been the case, and nowhere are such sounds heard with greater distinctness, than when on the summit of a high peak in the midst of a mountainous country, where all the world is in perfect quiet around. The low rumble is then heard for a considerable time before the earth below receives the shock. As many persons believe, and are of opinion that seismic disturbance is connected with atmospheric phenomena, noticeable long before the former force is exerted, I shall in this paper be particular,—though it may appear to some, adding unnecessarily to its length—and allude to the afternoon of the day in question, the 10th January, 1869.

The day, like 3 or 4 previous ones, had been rather hazy, not at all unusual in these hills at this time of year. The wind about 3 P. M. rose gradually up to about 4-30, blew gustly and cold. It must be remembered by those unacquainted with this locality, that the height is 3,000 feet above sea level, and near the base of a range with peaks rising up to 6,000. There was certainly nothing unusual or peculiar about the appearance of either the sky or the weather, these can have but little connection with forces acting so far below the earth's surface. That the action of an earthquake affects the atmosphere and temperature is almost certain, and I can imagine, that electrical and magnetic forces would be greatly agitated, after it has taken place, or rather during its continuance. There was one thing I did notice, and it is remarkable: a few seconds before the earthquake took place, wanting to make out a Trigonometrical mark on a hill-range some 20 miles distant, I had got out my telescope for the purpose, but it was so hazy that I gave up the hope of seeing even the outline of the ridge. Immediately after the earthquake, on looking in the same direction again, I was surprised at the sudden clearness that had taken place in the air, the ridge I had been endeavouring to scan, was sharply defined against the sky, and the whole of the western horizon was shewing clear.

The earthquake was ushered in by one or two long waves of motion, these I estimate from the time noted by the chronometer before the shock was quite over; in about 20 seconds they were succeeded by others much higher and following in rapid succession, and this was the time of greatest agitation of the surface, followed by great quiet rolling

or heaving, without any jarring motion ; it was, however, impossible to tell without the aid of an instrument when the motion ceased, but all, save tremor, had disappeared in about $2\frac{1}{2}$ minutes. Yet there was certainly instability in the ground nearly the whole of the interval, 10 minutes, between this and the second well-defined shock. The horizontal undulating motion, was decidedly combined with another force, a kind of jerking from side to side ; the surface not only rose and fell, but its parts seemed to shift about each in segments. The position of our camp here is on the principal northern spur thrown off by the well known and conspicuous peak of Mahadeo, 5,751 feet ; this is on the line of the North Cachar Hills as well as on the principal line of elevation ; the whole mass being here tilted up and dipping over southward some 40° — 50° . In fact Assaloo lies on the northern flexure of the great uniclinal that runs thence towards the west, marked conspicuously by the Jatinga and Kayeng valleys, and ultimately with the same great feature at the base of the Cherra Poonjee Hills and into the Garo Hills. It marks the great bend and break in the stratified rocks, when this mountain system was first upheaved. The North face of Mahadeo peak, clothed with magnificent forest growth, presented during the earthquake a strange wild sight, it appeared as if swept by a mighty wind, and the large trees in the foreground were seen swaying with the passing waves, from side to side, with great violence ; one large one came down with a crash, and another the roots of which had been much loosened fell the next day. There was a confused din from the ground below, mingled with the noise caused by the surging of the trees, this last sound I heard above that in the camp. Most individuals sat down, and it was with the greatest difficulty, that I and one or two others, who remained standing, could keep on our legs. The scene was most awe-inspiring, and the feeling instilled " what may happen next ? "

As might be expected, very great difference of opinion existed among persons in camp as to the direction whence the shock came and proceeded, some even stating the very reverse of the true direction. There is very little doubt that the direction was from west to east, the noise and motion in the trees certainly subsided and passed off to the east. A helitroper with 2 men, on the top of

Mahadeo, whence the view is most commanding over the sea of hills in Manipur, tells me that he could see the Mountain Peaks nearer at hand and on the East heaving about, and that the noise of falling rock was very loud, and continued long after the earth had quieted down with him. The effects upon these hills are very great; ravines choked with rock and debris; and one party of my men out-poling, found the body of a fine stag, that had been killed by the falling rocks when standing by the water-course.

On the Diyung, its effect seems to have been very severe; the high steep banks of recent clays and sand gave way in many places, falling into the river, the ground along the valley was much bent and the houses, structures of poles and matting were in many instances thrown over.

On the peak of Sherfaisip (a trigonometrical station) $26\frac{1}{2}$ miles almost due west of this place another heliotrope of this survey was stationed on the 10th; this peak is also like Mahadeo, situated on the North Cachar range, and is one of its culminating points, 5,612 feet. This man's account, is most interesting. He was on the peak by himself, sitting at the station mark with his heliotrope, facing east ready in case he was required to shew to Mahadeo; all was still, and he was likely to hear and notice any peculiar sound. He says that about 15 or 20 minutes before the shock, he heard the sound of a distant cannon (*lope* was the word used), as if fired some 30 or 40 miles distant. Before the shock came on, he heard the rumbling coming from the east, and when he felt it, he caught hold of the heliotrope, but that the motion was so great, he was thrown backwards. He distinctly says the motion passed away towards Marangksi peak, situated W. N. W. from his station.

Here we have, it is most interesting to find, two well selected points 26 miles apart, situated nearly due east and west of each other; at the first the waves were travelling eastward, at the second westward, this places the divergence of the forces between the two. How far this line would extend to the northward and southward, we have, or rather I have, no means of ascertaining with exactness, but it must resolve itself into a line of initial rupture, the intensity diminishing on either side. If my supposition, and what I shall endeavour to shew be correct, that the initial force exerted by this

earthquake lies upon a definable line, and not upon a centre, and that the waves of motion imparted to the earth's crust travelled away on both sides at right angles to that line of dislocation (if we may call it one,) it is not to be expected that such a rupture would be confined to a straight line, it would be more or less divergent at different points affected by rock masses below the surface; it might even bifurcate at any point on its course, and the effect on the surface might greatly diminish for many miles, and again shew with great severity. It must be, however, expected, that near the line, and particularly at the point where the disturbance is excessive, the direction would be very various, and the motion more like that of a chopping sea; or the undulations of the surface might merely rise and fall vertically, with but very little horizontal motion to any particular point of the compass.

From all the accounts that have reached me from distant quarters, —and I have but very few details as yet to work on,—Silchar seems to have felt its force more than any other place. I read in the *Englishman* that Nowgong suffered much, while Gowhatty in a much less degree. Again, a correspondent in Chittagong who appears to have been in a very favorable position for observation of what took place, states that the waves were travelling east with slight northerly direction; this would place the motion at right angles to a line south of Cachar to the west of his position. The direction noted by M. Lafont in Calcutta, was an east and west one, not from a central spot, say Cachar, but from a line drawn south-south westerly from that place into Tipperah Hills. It will be interesting to discover the direction of the earth-waves at Gowhatty and Nowgong.

At the junction of the Diyúng and Kopoli they were travelling eastward and the shock was very severe indeed; in the Khasi Hills from the N. Eastward;* in the Garo Hills† from N. E. to S. W.; at Golaghat‡ it was from the Naga Hills i. e. the south-west; at Lukhimpoor§ from S. W. In these few instances, that I can now quote, the directions are not divergent from a centre, but from a line or curve. Looking at a map of this part of India, it must be at once

* On Lat. 25-40, Long. 92-45 from the East.

† *Englishman* of January 25th, 1869.

‡ *Englishman*

§ *Englishman*, January 27th, 1869.

apparent, how peculiarly Silchar is situated with respect to the neighbouring hill ranges. We find the N. Cachar Hills running east and west on its north, the low hills of the district itself, and those near the sources of Barak and Eerung, almost due north and south (or with their strike) on its eastern side. A closer acquaintance with the country on the north and at the base of the hills shews the great unclinal flexure that exists there, while in the gorges, where the greater rivers from the interior find an exit, we see the magnitude and almost incomprehensible displacement of strata, east and west strikes altering to north and south in apparent inextricable confusion.

I will now return to what I have before brought to notice, viz., that on a point somewhere intermediate between Sherfaisip and Mahadeo peaks of the North Cachar range of hills, the earth-waves travelled outwards east and west. On looking at a sketch of the ground, I was struck with the coincidence, that almost midway between the two peaks lies the remarkable gorge of the Jatinga, cutting diagonally through the strike of the outer mountain system. This gorge marks a great dislocation, and such a feature would as it were point to weak lines on the earth's crust, where when the subterranean forces are exerted, they will again be felt with greater severity on the surface, and spread away on either side. Almost immediately opposite the gorge of the Jatinga lies Silchar and the area that has suffered most. The position with reference to the hills around, points to one of all others, where crushing and grinding together of the rocks would result on any motion being communicated from below to it and those neighbouring hill masses, and would result in upheaval of some spots and depression of others. It would be compressed, causing water with sand or mud to be forced up through the lines of bedding in the strata, and through the alluvium to the surface, a phenomenon apparently noticed all over the more level country.

I have not myself been in, and examined the Zilahs near Cachar, but I refer my readers to the Report of Mr. Medlicott *on the coal of Assam, with geological notes on the adjoining districts.** Pages 46,

* *Memoirs Geol. Survey of India.*

47 and 48 can be read now with much interest; the crushing of the rocks near Silchar is prominently noticed; the dome-like shape of Katigunah hill and its anomalous composition, probably owes its origin to some long past convulsions of this area. In fact from Silchar skirting the hills including the country near Sylhet for many miles to the west, it would appear as if local displacement by upheaval has played a considerable part in recent geological times towards shaping the present lines of the surface, and particularly will account for the detached hills of highly inclined strata, capped and often quite hidden with unstratified conglomerate and gravel, to be seen in many places. But this is entering on matter that would require much local observation and knowledge.

Returning to the N. Cachar Range near Longitude $92^{\circ} 50'$ it is equally interesting and remarkable, to find on the north, several deep gorges through the mass of but slightly inclined Tertiary sandstones and shales, that finally unite and form the Kopili river. This line of the Kopili also marks a great geological feature, namely, the up-throw of the Nummulitic limestone which to the east bends over with all the super-imposed strata, and takes an easterly dip, and is consequently not seen again on the Diyúng or other deep valleys still further east. On this line of upheaval of the limestone we find perennial hot springs, with very high temperature close to the Kopoli. Approaching nearer the valley of the Kopoli, I have the evidence of the people of the Naga village of Chinam, that the earthquake with them travelled east. I fully expect to receive in time information from numerous other points near this valley, and in the mean time I cannot but think that the line of origin of the disturbance carried north of the main range lies down the valley of the Kopoli, and with the up-throw of the stratified rocks against, or on the metamorphics. I hope to be able to illustrate this by a map, shewing with arrows the exact position where the direction of the shock was noticed, and I am sure if like information can be collected by any one in Tipperah and Chittagong, that some interesting matter for speculation and thought would result. Enquiries are necessarily to be made at numerous places, and although much of such data will be that supplied by natives it is valuable. It is all we can get, and must be made the most of, and only by the accumulated

data of each succeeding convulsion, can we hope to become better acquainted with the forces and action of such phenomena.

The first shock after the great earthquake was not severe, the motion being very quiet and swaying, no shaking whatever. The second was a very peculiar vertical motion, a regular thump from below, followed by another precisely similar in 20 seconds. The greatest number of shocks occurred between 6 p. m. and 8 p. m., that at 6-32 lasting a minute. A very gentle motion and tremor occurred about 6 p. m. The hoolooks who had long retired to rest were evidently disturbed by the shocks, and were heard in the forest close by.—After this date, the most decided shock was on the 14th January at 3-30 in the morning, and another on the 17th was also severe,—two distinct waves at about 12 p. m.

Very noteworthy is the distant report of a heavy gun on the 19th January, heard towards the west at 1-49-19 p. m., the time I took immediately by chronometer as I fully expected a shock to follow. Another very loud explosion was heard from Mahadeo peak at midnight of the 29th; and again from the same peak, at 7 A. M. next morning the 30th, but no shock came after, on either occasion I may here mention that last cold weather, on several occasions, when I was in the North Cachar Hills I heard at various times, the like distant reports, resembling exactly the firing of big guns at a great distance. In one or two places the country people had noticed it, and they even used the expression that it proceeded from the earth. These subterranean explosions must be heard over large areas, and it would be interesting if they could be noted, or rather if those hearing them, would make the matter public; I have no doubt there are many individuals who will remember having heard such sounds.

During the whole period of disturbance here, it is my belief that the ground has scarcely been in perfect rest, for any continuous length of time, certainly up to the 20th, and that a seismometer would have recorded many a movement imperceptible to the senses. When observing with a 12-inch theodolite at Mahadeo, the instrument has been repeatedly thrown out of adjustment and the exact time and motion unknown, and unperceived, save by the alteration of level. On one perceptible shock, the ground was trembling long after we had ceased to feel it. This the bubble shewed for quite 2 minutes and when

set east and west, kept shifting regularly by jerks about 1 degree of the scale. Regarding levels of the country, in one so mountainous and covered with forest, only very great displacements could meet with observation; in the plains of Cachar and Sylhet they appear to have been great, and there they would be peculiarly easy of observation in the beds of streams, &c. It would appear to have affected streams a good deal and to have caused a rise in them. The small stream west of Assaloo increased considerably afterwards, and was of course very muddy. Men proceeding to Cachar from my camp, found the ford at Pani Ghat much deeper by more than a foot on their return, and they re-crossed it 6 days after the first great shock; they said also that all minor streams had more water in them. In the table attached, I give all the shocks recorded here up to the 2nd February, on which day the last took place.

The Nagas about here do not remember any earthquake like the present, but have some tradition of former disturbances, many years ago. They all say that the crops will be particularly fine this year, and believe it will be due to the visitation,—a parallel to the good vintage of the comet year.

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Table exhibiting the shocks of Earthquakes on 10th January, 1869, and following dates, at Assaico, Lat. 25° Long. 93°

Date.	No.	H.	M.	S.	Intervals.		Time noted with chronometer, corrected by observation of the sun on the morning of the 12th, and its rate by several subsequent observations. —Time noted with watch, corrected with chronometer.
					H	M.	S.
10th	1st	5	..	47	..	..	..
	"	5	1	7	..	..	20
	"	5	3	17	..	2	30
	2nd	5	13	27	..	10	10
	3rd	5	53	47	..	40	20
	4th	5	54	7	..	..	20
	5th	6	8	17	..	14	10
	6th	6	32	47	..	24	30
	7th	6	33	47	..	1	..
	8th	6	41	47	..	8	..
11th	9th	7	5	47	..	24	..
	10th	8	11	47	1	6	..
	11th	10	1	17	1	49	30
	a	10	18	..	..	17	..
	b	11	10	..	..	52	..
	c	11	17	..	..	7	..
	d	11	26	..	..	9	..
	e	12	26	..	1	..	..
	f	12	28	..	..	2	..
	g	12	31	..	..	3	..
	a. m.	12	35	..	..	5	..
	p. m.	5	30	..	..	..	..
		7	20	..	..	..	..

Commencement as near as it could be, estimated from time noted during its continuance with Pennington's Chronometer, No. 168.

Period of greatest intensity. Direction from W. by N. to E by South.

Time it lasted, but the Earth continued in a tremor for some time even after this.

Interval from 1st shock, lasted 4 or 5 seconds, motion undulating, not very severe, watching chronometer at time.

Shock a jump, motion vertical. } These two were of exactly the same intensity and

Ditto ditto ditto. } strength.

Slight.

Laated quite 60", gentle undulating motion and tremor continuous.

Ended.

Decided quiver.

Very slight.

All smart shocks. Other shocks were felt at intervals; all well marked ones are recorded, those noticed by only one individual, when others were moving about, have not been entered; it is very certain that for long intervals there was motion in the ground of a tremulous kind, which a sensitive instrument, or Seismometer, would have distinctly shown.

The last the strongest.

Rather strong.

Two jars in succession.

Slight.

Very slight.

Feeble.

Ditto.

Rather strong.

Slight.

These last lettered shocks were noted with a clock, it stopped before the morning and unfortunately before its time had been compared with the chronometer, so that these times are only approximate.

13th	a. m.	9	48	30	...	...	...	Ditto.
"	a. m.	2	23	...	...	...	...	Felt at Mahadeo slight. Earth in tremor for a long time after it was felt, as shown by the bubble of Theodolite, which was at the time levelled for vertical readings.
14th	a. m.	3	32	...	...	...	...	A very smart shock.
15th	p. m.	10	45	...	...	...	...	Slight shock.
16th	p. m.	4	34	51	...	...	...	Ditto
"	p. m.	6	13	21	...	...	...	Vertical jump.
17th	p. m.	11	51	8	...	...	...	A severe shock, two distinct waves.
18th	a. m.	7	48	...	...	...	...	About 7 a. m., slight.
19th	p. m.	1	...	23	...	...	...	No shock, but sound of an explosion, like a distant piece of heavy ordnance fired on the west.
20th	p. m.	2	...	...	...	...	...	Slight shock felt while observing angles at Mahadeo. H. S. about 2 p. m.
21st	a. m.	4	...	...	...	...	...	About this hour, very slight.
"	p. m.	6	45	...	...	...	...	Ditto, the last felt for several days.
22th	mid.	...	...	...	...	...	...	About midnight a very loud report of explosion heard to the south of Mahadeo, H. S. Latitude 25° Longitude 93°.
30th	...	...	...	...	...	...	...	Another fainter, heard about 7 a. m. on the same peak.
31st	between	{ 11 30 } { 12 0 }	...	...	...	...	...	Slight shock felt in camp. Observing angles this day on Mahadeo peak. Level of the instrument 12". Theodolite was thrown out in very unaccountable manner and certainly was not accidentally touched. After leaving it for breakfast, found it again thrown out of level; this was the time a shock was felt in camp at the base of the mountain.
Feb.	a. m.	12	30	40	...	...	...	Shock very marked.
1st	a. m.	8	...	54	...	...	...	Very slight, just perceptible. Another reported by natives occurred about 5-30 a. m. and was distinct, and noticed by several.
2nd	p. m.	5	50	19	...	...	...	Very slight.

Upon the invitation of the President, Mr. Leonard gave a short account of his recent visit to Cachar. He stated that the reports regarding the severity of the earthquake, and especially as to its action in rupturing the earth, were considerably exaggerated ; early reports were decidedly so, most people being so much surprised and alarmed by the shock and its results, that they seemed to be incapacitated at the time for making anything like accurate observations, and hence very great caution should be observed in accepting information as to the intensity of the shock, or as to the direction of the wave. He could vouch for the fact, that highly exaggerated and most incorrect accounts had been received by himself on the subject.

Regarding the point of greatest intensity, he was first inclined to think it was about Silchar, or even more to the west ; but since he returned from Cachar, he had an opportunity of seeing a letter from Doctor Brown, the resident at Manipoor, whose account seems to show that the shock had been as severe at Manipoor as in Silchar. To the south of Silchar the shock—judging by the land slips caused—seems to have been felt less than in the station, and to the northwest along the road to Cheera Poonjee, for instance, the effects were decidedly less.

There was great difficulty in deciding, from the observation of facts, the direction of the wave. Statements of individuals were generally to the effect, that the movement was from about the south. The church tower fell to the north : but an unfinished building of Messrs. Snells, which consisted almost entirely of unsupported pillars, was thrown down in all directions ; the pillars were free to fall in any direction and they really fell to all four points of the compass. Mr. Leonard said, it might be worth noting that houses, with the ordinary Indian flat roof all stood, while most of those with roofs which did not give support to the walls were thrown down or damaged.

He stated that the photographs of damages done by the earthquake, were calculated to give an exaggerated idea of the extent of disturbance of the earth. The disturbances in every case which he had seen, were caused by the slipping in of the banks of the large rivers, or of old river beds, or partially filled up jheels ; though he had travelled through the disturbed district for over one hundred and fifty miles, he had not seen a single case of disturbance or fracture of solid ground, unaffected by rivers or jheels running through it. Many of the slips along the river banks were very extensive, in some cases being con-

tinuous for half a mile in length, from five hundred to fifteen hundred feet in width, and the depths of the depression varied from a few feet to thirty feet. Very large quantities of sand and water were thrown up; but he considered that in every case the forcing up of the semiliquid matter was due to subsidence of the firm ground above.

Mr. Leonard stated that the great majority of people said that the water thrown up was cool, a few, however, stated that it was decidedly warm, generally the evidence went to show that it was very little if at all warmer than ordinary water. However as Dr. Oldham had gone over the ground with the special object of studying the whole question, there can be no doubt that we shall soon be in possession of the best collection of facts, and the soundest deductions from them which it is possible to supply.

The President remarked upon the general interest attached to the observations of earthquakes, and expressed the hope that we may get more information on the subject.

Dr. Stoliczka said that, if there were a distinct stratum of sand below the layers of surface clay or soil, the throwing up of sand and water, which during former earthquakes (as that of Lisbon) had attracted so much attention, would be very easily explained. It is almost a natural consequence that, as soon as the fissures in the surface were formed, the slightest undulating motion (which it partially must have been), would shift and throw up the loosened sand; the force with which it was brought up to the surface, would, however, depend upon the local pressure under which the sand and the water stood.

Mr. H. F. Blanford mentioned that he had also obtained in many instances contradictory reports. Up to this time he was perfectly unable to form a correct idea as to the velocity with which the wave travelled. The increase of the temperature of the water appears to be remarkable. In one case, he was informed that the water which came up through one of the fissures had a temperature 9 degrees higher than the annual mean temperature of the locality. This increase was, however, more likely the result of chemical agents, as for instance, decomposition of organic substances &c., than to the great depth from which it had been supposed to have come up.

Mr. Leonard remarked that local pressure upon the underlying strata had also to be taken in account, in cases where an increase of the temperature of the water had taken place.

V.—*Ornithological notes, chiefly on some birds of Central, Western and Southern India*; by W. T. BLANFORD, F. G. S., C. M. Z. S. (Abstract.)

Mr. W. T. Blanford said that it was unnecessary to take up the time of the meeting by reading the paper in detail; it consisted chiefly of notes on the distribution, breeding, and habits of some of the less known birds of India. Since the publication of Dr. Jerdon's invaluable work, by far the most important publication on Indian Zoology ever printed, the study of Indian birds had been very greatly facilitated, and it became now an object to complete the information concerning them. In several instances, many of them pointed out by Dr. Jerdon, additional data were required, especially concerning distribution. Mr. Blanford had had rather favorable opportunities, when travelling about India on the duties of the Geological Survey, of seeing the fauna of different parts of the country, and he only regretted that he had not taken more complete notes.

As an instance of the interest of the subject, he would point out that he had been able to add several additional observations to those already recorded on the differences between both the migratory and non-migratory birds of Eastern and Western India, employing the name India in the way in which it is generally understood in India, and not in that in which it is equally generally misunderstood in Europe, and restricting it to the Cis-Gangetic Peninsula. Thus the common red-breasted fly-catcher of Bengal, *Erythrostera leucura*, was not met with at Nágpúr, while the European *E. parva* abounded. In the same way *Saxicola opistholeuca* and *S. atrogularis*, *Circus cyaneus* and *Emberiza Huttoni* were all found at Nágpúr, or at Chanda still further south, not one of which has been met with in Bengal. On the other hand, Mr. Blanford had never seen a specimen of *Circus melanoleucos* or of *Gallinago stenura* in Central or Western India. They might occur, but probably only as stragglers, as neither appears hitherto to have been recorded.

Some of the non-migratory birds also, especially those which are Malay forms, do not appear to have so wide a range as is generally supposed. Thus neither *Carpophaga sylvatica*, nor any species of *Osmotreron* appear to be found in the great forests of the Lower Nerbudda and Taptee vallies. Mr. Blanford had been throughout

these forests, and could scarcely have overlooked so very conspicuous a bird as the Imperial pigeon, for even had he not been looking for birds in general, he would certainly have killed such an excellent addition to a jungle dinner, if he came across it. Neither did he meet with either of these pigeons in the great woods near Chanda, while he saw both near Sironcha on the Godavery, and both were found in Orissa.

Some of the birds noticed were of great variety, such as *Salpornis spilonota*, *Hirundo fluvicola* and *Cyornis Tickelliae*.

VI.—*Descriptions of some species of Reptiles and birds supposed to be new to the Indian fauna ; by A. E. CARLLEYL, Esq. (Abstract.)*

Dr. Stoliczka said that the paper, which is of considerable length, mostly contains the descriptions of species which Mr. Carlleyl collected near Agra, and which he supposes to be new. A detailed description is given of a species which appears closely allied to *Varanus lunatus*, and which belongs to the group of land—*Varani* for which Fitzinger suggested the name *Psammosaurus*. A new species of water snakes, closely allied to *Ferania* of the HOMALOPSIDÆ, is also described, and photograms of this species, as likewise of the former one, accompany the description. This species of watersnakes was found in the river Jumna, and is being described by Dr. Jerdon in his forthcoming work on the Indian Reptiles.

Of birds, four species are noticed, all supposed to be new ; one is a small water-hen, probably a species of *Porzana*, from the neighbourhood of Calcutta ; the other a *Motacilla* (shot at Agra) which may prove to be a plumage variety of the *Dukhanensis* or *personata*. Further, descriptions are given of two large eagles, one of which at least seems closely allied to, or identical with, *Aquila imperialis*.

Mr. Carlleyl hopes that he will be able to supply accurate drawings of all the species, and until these have arrived, it would be impossible to pronounce an opinion upon several of the supposed novelties.

LIBRARY.

The following additions have been made to the Library since the last meeting, held in February.

Presentations.

. Names of Donors in Capitals.

Journal Asiatique, No. 45.—THE ASIATIC SOCIETY OF PARIS.

The Anthropological Review, No. 24.—THE ANTHROPOLOGICAL SOCIETY OF LONDON.

Bulletin de la Société de Géographie, October, No. 21, Vol. XVI.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Mittheilungen der K. K. Geographischen Gesellschaft in Wien.—THE GEOGRAPHICAL SOCIETY OF VIENNA.

Pubblicazioni del Circolo Geografico Italiano, fasc. I.—THE GEOGRAPHICAL SOCIETY OF TURIN.

Indische Streifen von A. Weber.—THE AUTHOR.

Über die Krishna Janmāshtami von A. Weber.—THE AUTHOR.
Alloquium Latinum ad Indicarum Academiarum Cancellarios, scriptum a Lingam Lakshmanji Pandito.—THE AUTHOR.

The Calcutta Journal of Medicine, No. 12.—THE EDITOR.

Memoirs of the Geological Survey of India, Vol. VI. Part 3.—THE SUPERINTENDENT OF THE GEOLOGICAL SURVEY.

Records of the Geological Survey of India, Vol. II. Part I.—THE SAME.

Report of the Committee of the Bengal Chamber of Commerce for 1868.—THE BENGAL CHAMBER OF COMMERCE.

Minutes of the Trustees, Indian Museum, for September, 1866, to March, 1868.—THE GOVERNMENT OF BENGAL.

Purchase.

Revue Archeologique, XII. 1868.

Revue des Deux Mondes, December, 1868, and January, 1869.

Revue et Magasin de Zoologie, No. 11, 1868.

Journal des Savants, November, 1868.

Comptes Rendus, Nos. 18 to 24, 1868.

The American Journal of Science and Arts, No. 138.

The Annals and Magazine of Natural History, No. XIII. Vol. 3.

The Westminster Review, January, 1869.

Günther's Zoological Records, Vol. IV.

Grimm's Deutsches Wörterbuch, Vol. IV. Part 2 and Vol. V.

Reise der Österreichischen Fregatte Novara, Zoologischer Theil, Part I.

Lacordaire's Genera des Coléoptères, Vol. VIII.

Simpson's India, Part 3.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR APRIL, 1869.

The Monthly General Meeting of the Society was held on Wednesday the 7th instant, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The receipt of the following presentations was announced—

1. From Babu Yadunátha Basu,—a Mahomedan copper coin.
2. From J. Avdall, Esq.,—a Persian MS. of Hafiz.
3. From W. Stokes, Esq.,—A copy of “Kurzer Abriss einer Lautlehre,” von A. Schleicher.
4. From the same,—a copy of “Grundzüge der Griechischen Etymologie,” von G. Curtius, vol. I.
5. From the Rev. J. Long,—A copy of ‘Histoire critique de Manichéisme et du Manicheisme par M. de Beausobre,’ 2 vols.
6. From the same,—A copy of Kriloff’s Fables, illustrating Russian Social life.
7. From the Commissioners of the Department of Agriculture, U. S. A.—A copy of Annual Report for 1866.
8. From the same—A copy of Monthly Report for 1867.
9. From the Englishman Office,—A copy of “Rapports du jury International de l’Exposition Universelle” of 1867.
10. From A. C. Carlleyle, Esq.,—A copy of Notes, Numismatical, Palæographical and Archæological relating to India, MS.

The President in laying Mr. Carlleyle’s MS. on the table, drew the attention of the meeting to the very good photograms of coins, partially belonging to the author, partially to the Riddel Museum at

Agra, where Mr. Carlleyle is curator. These photograms and sketches are accompanied by short explanatory notes.

The Council reported that they had elected C. H. Tawney, Esq., a member of Council, in place of Dr. Thomas Anderson.

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected ordinary members.

E. D. Lockwood, Esq., C. S.

M. L. Ferrar, Esq., C. S.

Maulavi Kabir-ud-din Ahmad.

Dr. F. Day.

The Rev. C. Hæberlin.

The following gentlemen are candidates for ballot at the next meeting—

Lientenant-Colonel Newal, R. A., proposed by the President, seconded by Mr. Blochmann.

R. J. Leeds, Esq., C. S., Chunár, proposed by Mr. Irwin, seconded by Mr. Blochmann.

G. Nevill, Esq., C. M. Z. S., proposed by Dr. Stoliczka, seconded by Mr. G. Wilson.

S. Kurz, Esq., proposed by Dr. Stoliczka, seconded by Mr. Blochmann.

W. Oldham, Esq., LL.D., C. S., proposed by Dr. T. Oldham seconded by Mr. Blochmann.

R. A. Gubbay, Esq., proposed by Maulavie Abdoolatteef, seconded by the Hon'ble J. B. Phear.

The following gentlemen have intimated their desire to withdraw from the Society ;

J. Agabeg, Esq.

Capt. A. Pullan.

Bábu Kedáranátha Banerjí.

Reports on the late Earthquake received since the last meeting from the Government of Bengal, were laid on the table.

Major G. Pearse's letter, bringing to the notice of the Society Dr. McFarlane's belief of the existence of pre-historic remains of man near Rewah, was also submitted. Major Pearse writes, under date of "Cheltenham, 8th February, 1869," as follows—

"Dr. MacFarlane, of the Retired List, Madras Army, who was with Sir

George Whitlocke's column in the Mutiny War of 1857, has brought to my notice a circumstance which I place before you, as it may be deemed worthy of being enquired into, should it not have already been so. And should it have been so, I shall be much obliged by being informed where mention is made of it.

“ Dr. MacFarlane states, that 10 miles from Simareea, which place is 14 miles from Rewah, at the Falls of the Tonse river, are pre-historic remains of an unusual nature;—in so far, that the mounds or barrows are flattish; that the stones encompassing them are around barrows of parallelogram form, instead of around circular barrows; that these barrows extend for miles, and are laid out as we lay out flower-beds, but that all the beds or barrows are of parallelogram form. I don't remember to have heard, or read, of this pre-historic sort of structure.”

The President stated that the Council in communicating the above letter, wished to draw the attention of the members to these interesting relics, should any one of them have an opportunity to examine the locality.

The President then introduced to the meeting the Rev. Dr. Wilson, of Bombay, who delivered an address “on the prospects of Indian research,” of which the following is a very brief abstract :

The Rev. Dr. Wilson, in addressing the chairman and the meeting shortly noticed how the Asiatic Society of Bengal was founded by that prominent Orientalist, Sir W. Jones. He stated how Colebrooke enriched the Society's transactions by his very learned and interesting researches into the history, antiquity, &c. of India : and how the subsequent minute investigations of European science have corroborated his statements. Professor H. H. Wilson, extended the investigations, first commenced by the learned founder of the Society, and his labours in the analysis and examination of the Puranas have elucidated the hitherto unknown origin of Indian customs and manners. He, it was, who translated the several dramatical works of the Hindus, and first brought to the notice of the European public, the beauties of the Sanscrit language. The Rev. Doctor also called the attention of the meeting to the unparalleled persevering ingenuity of Mr. James Prinsep, and particularly dwelt on his labours, connected with the decyphering of the edicts of Asoka. Thus, through the im-

portance which these works had upon history and language, the Asiatic Society of Bengal became the parent of almost all the other Societies of the kind.

Dr. Wilson then briefly mentioned how Mr. McIntosh founded the Bombay Branch of the Royal Asiatic Society, and spoke of the practical benefits derived from the labours of the Societies in India.

The Indian literature and history have greatly benefited by the study of the old classic writings of the Hindus, and he (Dr. W.) was gratified to say, that the progress which has been made in the publication of the Vedas, justifies the expectation that they will soon be completed in the hands of oriental scholars. The study of these Vedas is most important, not only in a historical point of view, but interesting, as shewing the simplicity of the character and customs of the people, and as connected with the origin of mythological ideas.

Dr. Wilson here read a long extract from the introduction to his forthcoming work, "on castes," in which he shewed the importance of the study of the Vedas.

These ancient writings make it now evident that there had been a considerable amount of civilization among the Aryans of this country, though their progress in this respect was not as large, as that of their brethren who travelled towards the west. It is most probable that the Indian Aryans were pastoral tribes, which spread over all the fertile country of the large valleys of India, but on account of the hostile attacks of the aboriginal races, they still were obliged to maintain an intimate connection, however distant their mode of wandering may geographically have necessitated their separation. Thus a sort of common social life was founded; religious views were developed, customs and laws of common intercourse established. Their religion, which was altogether in the hands of the priests, chiefly occupied itself with magic ceremonies, though a certain amount of philosophic ideas is observable through the whole system. Unlike the Aryans who migrated towards the European shores, and were susceptible to every influence of foreign civilization, the Indian Aryans shut up themselves from all foreign influence, preserving their own original and peculiar system of religion and other ideas of social life. This exclusion of foreign elements, Dr. Wilson, however, considered as probably disadvantageous to the progress of their civilization.

During the time of the Vedas, the Indian Aryans still were chiefly a pastoral people, though to a certain extent also agricultural, as shewn by the frequent mention of their herds of cattle, buffaloes, horses, camels, &c. Their wars with the neighbouring tribes shew that their military arrangements also must have been attended too. All these occupations were connected with a certain degree of industry, and in works of art they were by no means ignorant. They knew the art of weaving and spinning, the use of iron, copper, brass, &c., of which they possessed various instruments for agricultural and domestic purposes, as well as weapons for defence in time of war. The precious metals were worked to a large extent, and used as a kind of payment in exchanges, or as ornaments; the polishing and cutting of precious stones was equally well known. In war they had, like the Egyptians, chariots drawn by horses, of which they seem to have taken great care. Poisonous extracts of plants, and the intoxicating properties of other vegetables were then already in use, though probably more tolerated, than encouraged. Their commercial connections were also extensive, they must have had intercourse with the East as well as with the hilly country of the North, for the *pashm* was known to them. In support of all these and many other occupations of the people, Dr. Wilson read a very long list of names of artisans mentioned in the Yajur-Veda; among these names were such as ivory-worker, dealer in nectar, compounder of perfumes, confectioner, painter, actor, worker in coral, brass-founder, stone-cutter, destroyer of poison, cotton-dealer, &c., which undoubtedly shew a high state of civilization.

Dr. Wilson stated that the Asiatic Society of Bengal first commenced the printing of the Rig Veda, when Professor Max Müller, under the patronage of the Hon. E. India Company began his edition of the Veda. The Society had also the greatest share in bringing to light the Vedic literature of the Brahmans. Dr. Haug of Bom'bay had published the text of the Aitareya Brahmana of the Rig Veda, which was of very great interest, and Dr. Weber's studies in the Yajur Veda, were equally acknowledged.

The Aranyaka lectures, delivered in the forest, and the Upánishads have been published by the Society. The difficulty of the meanings of Vedic words was here pointed out, as many explanations of the Vedic terms are conjectural.

The Society have also published the *Srauta Sutras* and the *Grihya Sutras*. The *Sutras* are directions for performing Vaidic ceremonies ; they are more recent than the *Vedas*. Dr. Wilson also referred to the numerous ancient *smritis*, fragments of which he had collected. The grammar of the Hindus, he stated, is a great evidence of the character of the Hindu mind. He mentioned that there were grammars in existence before Panini, and recommended that the native systems of grammar should be studied together with the European. As regards the styles of the Hindu poetry, he said they are not the very models of of elaborate writing : Kalidasa's long syllabic words do not much beautify his poems. Several authorities were of opinion that Kalidasa flourished as late as the 12th century. Dr. Wilson admitted, however, that the Hindu poet was sensible to the beauties of nature, and is famous for his descriptions of Hindu scenery.

After these remarks on the labours of the Asiatic Society of Bengal, Dr. Wilson briefly stated the direction of the labours of the Bombay Asiatic Society. They had devoted their attention chiefly to Sanscrit and Pársí, as also to the study of the numerous Buddhistic and Brahmanic remains, as regards structures as well as inscriptions. Of late they had, however, paid great attention to philological Grammars of Gujrati and to Vernaculars. He suggested that more attention should be devoted to the vernacular languages, and took this opportunity of mentioning Mr. J. Taylor's Gujarátí Grammar, recommending that similar Grammars of the other vernacular languages should be prepared.

The Rev. Dr. then stated in general, his views regarding the Aryan population of India and alluded to the numerous variations which the climate, and other causes, may bring forward in the human character. As regards the language, he stated that eight-tenths of Bengali words can be derived from the Sanscrit, but he expected that if investigations were earnestly begun, almost all may be traced ultimately to the Sanscrit. He further thought that people were sometimes too ready to refer Indian words to non-Aryan languages. As an instance, he derived the word *Páre*, *one-fourth* of a *sera*, from the Sanscrit word *páda*, and said that such interchanges of labials and dentals are not scarce. The non-Aryan words are certainly worthy of attention, but they ought always to be carefully

compared with the variations of the Sanscrit words. The Bráhmī language, he believed, to be a cognate of the Telugu. He derived the word *Gond*, a tribe, from *Govinda*, and the *Koles* from *Kula*, a clan.

Dr. Wilson then briefly alluded to the progress that had been made in other branches connected with history and linguistic studies. He specially pointed out Mr. Campbell's Summary of the Ethnology of India. India has, he stated, true aboriginal races in large numbers, and he hoped that further study would largely elucidate our as yet very imperfect knowledge of the races.

The progress made in natural history in India, especially in botany and geology, were also briefly pointed out.

In conclusion, Dr. Wilson referred to the great progress which the Society lately made in the study of the Persian and Arabic literature. Mr. Blochmann's translation of the *Ain-i-Akbari* he thought a very important publication.

The President, after having remarked upon the very large field of research which Dr. Wilson had noticed, proposed that the special thanks of the Society be given to the Rev. Dr. Wilson for his eloquent address.

The proposition was carried with acclamation.

The President, having requested Mr. W. S. Atkinson to take the chair, exhibited to the Society a number of photograms, shewing the results at Cachar of the earthquake which occurred on the 10th January, 1869. Two of these he had specially taken, as exhibiting, better than those views selected by the photographic artist, the peculiar result of this serious disturbance. These were, the gateway of the cemetery, which had been entirely overthrown, and a handsome and massive white marble tomb in the cemetery, the slabs comprising, which had been thrown from their original position to a distance, in the case of the topmost slab, of eight feet, carrying with them the iron railings of the tomb, and the chain, supported by wooden pillars, outside the fence. These two cases were quite consentient as to the direction of the great shock at Cachar, which was from 5° to East of North. Other facts confirmed these observations. And from the fall of the masses it will be possible to arrive at a knowledge of the celerity of motion of the wave particles, and possibly of the amplitude of the wave.

The results, however, of this great shock were complicated by those

produced by minor shocks, of which two at least preceded the greater shock, and several succeeded it. He (Dr. Oldham) had been able also to obtain some evidence tending to establish the angle of emergence, at several points of observation, which would shew the depth of the seismic focus, and also some readings of direction from other places than Cachar, which all pointed to a position under the Naga hills as being the source of the disturbance. Of all these full details would be given in report.

The most striking result of the earthquake, were the great fissures in the surface, and the sinking and swelling of the surface over a large area. These were certainly very remarkable, and had produced much damage, but they were in all cases only *secondary* results of the earthquake. They were exclusively confined to what was called by the people of the country the *bhurte* (or 'filled in') land, there being no single case of their occurrence in the *kandy*, which might be called the old banks, of the river valley. But in every one of the many long curves which the river Baruk forms below Cachar, and for scores of miles, these fissures might be observed, greatest in amount near the river bank, but extending for miles across these peninsula-like extensions of the river flats. The cause of them became evident after a very little examination. All the country referred to, is composed of some 30 to 40 feet thick of hard clay, and sandy clays, which for thousands of square miles, rest upon a bed of 3 to 4 feet thick of bluish silt, or ooze, very porous and being highly charged with water. In this wet state the colour appears very much darker, and the whole looks of a deep greyish blue. The bed is about the level of the river at its present low water, or dry season height. The finely divided silt, or ooze, thus charged with water, formed a highly slippery or unctuous bed, on which the slightest motion would tend to make the heavy and more solid beds above to move, or slide. The shock came; this bed, and the large amount of water in it, were disturbed, the support of the beds above weakened, and in many places removed, and the necessary consequence was, that they fell in. The moment motion commenced, the soft silt below was squeezed out by the superimposed weight: and the entire thickness of the beds above slipped down or slid out, on the greasy surface; this motion producing cracks and fissures. Frequently the sudden pressure of this mass of some 30 feet thick above forced up the fine

silt through the fissures, or through any holes in the surface. At first it was in places driven out with the rapidity of a cannon shot, in a perfectly dry state, and gave one the idea of smoke issuing from these fissures, but almost immediately after the wet and slushy mud came up, and, overflowing the edge of the opening through which it had been forced out, formed a raised lip all round. If the watery mud continued to be forced up, it in many cases broke through the lip it had itself formed and flowed away in a kind of stream. But if not, or after the force had been exhausted, it gradually retreated again, and as it retired tumbled down the edges of the fissure through which it had been forced and eat them away into small conical hollows, which had been described as mud craters. Photograms, shewing all these peculiarities were on the table. Mr. Oldham stated that details of calculation &c. would all be given at a future time with a report on the facts.

A short discussion followed in which Mr. Atkinson, Rev. Dr. Wilson and a few other gentlemen took part.

Of the following papers short abstracts were partially read.

1.—*Notes of a translation of Balandshahar Inscription*, by BABU PRATAPACHANDRA GHOSHA, B. A. (Abstract).

This inscription records the grant of a village named Gandavá to a Gauḍa Brahman in Samvat 1233. The grant was made by Ananga, a king of Kalinga of the Rodra family. The inscription is in *Nágrī* characters of the Kutila type, though some characters are quite modern. The language is Sanscrit. The copper plate measures 1 foot 9 inches by 1 foot 1 inch. It was presented to the Society by Mr. Webster, Collector of Balandshahar in February, 1867.

2.—*The history of the Burmah Race, Part III.*; by COL. SIR A. PHAYRE, K. C. S. I., C. B. (Abstract.)

This paper is the continuation of Col. Sir A. Phayre's article on the History of the Burmese Race which appeared in the philological part of the Journal for 1868. In that paper, the History of Burmah, as given in the Burmese chronicle *Mahá-rádzá-weng*, was brought down to the year 660 of the Burmese Era, corresponding to 1298, A. D. In that year king Kyau-tswá, during the reign of whose father the Tátárs had invaded Burmah, was dethroned and eventually murdered by three brothers of the Shan race.

In the paper now laid before the meeting Sir A. Phayre traces the history of these three Shan brothers, and their successors and contemporaries to the year 1364, A. D., when Tha-do-meng-bya founded the city of Ava. The history of the successors of this king is then continued to the year 1555, when Bhureng NOUNG captured Ava, and usurped the throne.

The period, therefore, of the history of Burmah, as described in this paper, extends from A. D. 1298 to 1555, a space of 257 years.

The paper will shortly be published in the Society's Journal.

Notes on the Famine-foods of Marwar; by Assistant-Surgeon GEORGE KING, M. B., lately attached to the Marwar Political Agency, —communicated through DR. C. R. FRANCIS.

The substances resorted to by the very poor, as articles of food in times of famine, are probably pretty much alike in most parts of Northern India. With those used in our own provinces we are, unfortunately, but too familiar, yet as Marwar is a territory, of which most Europeans know so little, I have ventured to throw together a few notes on the substitutes for the ordinary cereals which are being used there, during the present severe famine. The accompanying specimens of the raw substances, and of the breads prepared from them, were obtained by me in October last, in the districts of Joudhpore and Pallee, from famishing wretches who were then subsisting largely on them.

The Marwarees, in common with the inhabitants of the neighbouring states of Jeysulmere and Bikaner, are familiar with famine, or at least with scarcity. In all three states, the annual rainfall is extremely small. There are no accurate statistics on record, but that of Marwar may be set down at about 3 or 4 inches, which (with the exception of a very uncertain fall of about a quarter, or half inch, in the cold weather) is confined to the latter end of July, August and September. The rain-crops afford the staff of life, for owing to the scarcity of water for irrigation, and its depth* in many cases from the surface, the area of wheat cultivation is very limited, and pulses are grown scarcely at all. Wide tracts of land are hurriedly ploughed after the first shower of the rainy season falls, and *joar* and *bajra*

* In Bikaner, some of the wells are more than 800 feet deep!

are sown. But even the fate of these crops is very uncertain, for if the scanty rainfall of 3 or 4 inches is not distributed in showers, falling at reasonable intervals they become stunted, and the yield of fodder (in these parts as important as grain) is insufficient for the support of the cattle. The crops having been reaped, these tracts lie quite fallow until next rains, and are almost undistinguishable from the surrounding "jungle," if the term can be applied to such a comparative desert.

The states, I have mentioned, are essentially pastoral. In Bikaner, camels are reared in enormous numbers, and in Marwar the wealth of the people lies chiefly in their horned cattle, while in none of the three is sufficient grain grown for the support of its own inhabitants. After the rains, a scanty crop of grass springs up, which, with the dry stalks of the *bajra* and *joar*, affords the year's supply of fodder for the cattle. Camels find their chief food all the year round in the leaves and twigs of *Zizyphus*, *Salvadora*, *Acacia* and other jungle shrubs.

On the first symptoms of a failure of grass, the majority of the horned cattle are driven off under the care of the younger men to seek forage in Malwah or Guzerat, a few bullocks being left to conduct ploughing operations, should showers fall in time to give any hope of a rain crop, and to prepare the soil for the cold weather crop, small as it is. Poorer people who have no cattle, aged and infirm people, and children, do not leave the country until pressure for human food begins to be felt.

Last year so early as the middle of August, the wiser ryots had their flocks in motion towards Malwah, but as rain so utterly failed, many who put off their departure until a month later, were obliged to remain altogether on account of the weakness of their cattle, the impossibility of finding forage for them on the road, and the difficulty of getting food even for themselves. Not a few who had actually reached Guzerat, having sold their cattle and valuables, and being unable to find employment, returned to Marwar, preferring to die in their homes if it must come to that, and like true natives trusting for something to turn up. But the scarcity is not of food only but of water also, and many a poor wretch was, I believe, prevented from fleeing the country from his inability to walk from one well of sweet water to the next, much of the Marwar well water being brackish,

and the supplies of superficial water having of course been exhausted at an early period of the drought.

With reference to the general subject of scarcity and famine in Rajpootana, the conviction has been forced upon me that these are more common of late years than in times past. This is the confidently expressed opinion of many intelligent old Marwarees with whom I have conversed on the subject. Scarcity is indeed now quite a chronic condition in many parts of Marwar. There is no evidence to prove that this rises from increased population. The character of the government of the country, during the reign of the present and of the last two or three Rajahs, has not been such as to render that a probable solution; besides it is known that the population of the towns at any rate has decreased of late. On the other hand there is a strong impression among the inhabitants that the cause lies in a diminution of the products of the soil, due to a steadily increasing failure of rain. In the absence of meteorological records, the question cannot be settled, but I am inclined to think that this is the explanation.

Much attention has been attracted of late to the reciprocal influence of the vegetation of a district and its rainfall, and the old observation—that *as trees are cut, moisture is lessened*, has been abundantly verified. It is needless to say that in Marwar this principle is unrecognised, and that there is no system of forest conservancy. There does not appear to have been of late any unusual destruction of forest products. For ages the struggle for life in the plains of Marwar has been between men and cattle on the one side, and vegetation on the other. It is an unequal fight, and vegetation is now losing. Nothing is conserved; the few indigenous trees are cut down, and none are planted in their stead. Even shrubs are not spared. Any one who has seen the hedges from 6 to 10 feet high and about as broad, made of dead prickly shrubs, that surround a Marwar village and its fields, can understand what drafts are made on the scanty undergrowth of the jungles for this purpose only. Many more are sacrificed in the preparation of “pala*” as fodder for cattle and camels, as well as for firewood. Herbaceous plants fare no better. These are nowhere

* “Pala” consists of the dried leaves of *Zizyphus*, the commonest jungle shrub in Marwar. To obtain it, the bushes are cut down and the leaves are shaken off the withered branches.

numerous, but on the first sign of drought, their roots are dug up as fodder for cattle, sheep and camels. By such measures not only is the influence of vegetation, as at once the conservator and attracter of moisture, interfered with, but the hard surface being broken up and loosened by the removal of the roots that bind it into consistency, the naturally light and sandy soil is exposed to the full force of the prevailing W. and S. W. winds.

The territory of Marwar lies between the Aravalli range of hills on the East, and the desert on the West, and the fertility of any part of it is in direct proportion to its distance from the latter boundary. At the base of the Aravalli lies Godwar, the garden of Western Rajpootana, while on the margin of the desert is situated the barren and inhospitable district of Mullānee. Sandstorms of long duration and great severity are extremely common at certain seasons, and they invariably blow from the west. Much that I saw and heard during a year's residence in Marwar leads me to believe that the loose sand of the west is gradually overwhelming the east, and as the process goes on, the reign of barrenness extends eastward.

It would be rash to say that the ruthless destruction of vegetation just described, is the sole cause of the alleged increasing frequency of scarcity in Marwar, but it may with safety be admitted that some attention to the conservation of forests (including in the latter term all the vegetable products of waste lands) would be likely to increase the supply of moisture in these regions. Every one knows the difficulty of planting trees in a dry district where the soil has been opened up to the influence of the sun and air, and where all shade has been removed by the cutting of trees.

Dry as Marwar is, however, several species of trees and shrubs could be successfully planted in the rainy season.

Chief among these are the three species of *Acacia*—*Arabica*, *leucophlœa* and *Catechu*,—*Salvadora Persica*, several species of *Zizyphus* and *Capparis aphylla*. The two first mentioned are valuable as timber trees.

Should a railway, as is proposed, be laid down in Rajpootana, the subject will become one of importance to our interests, but without the interference of our Government, nothing whatever will be done by the native rulers, whose interests are really most affected.

The chief jungle products being used as food during the present famine in Marwar are as follows :—

1. *Mothee*. This is the root of *Hymenochaete grossa*, of the natural order *Cyperaceae*, a tall rush which grows on the margins of tanks. It is not eaten by cattle, but in times of famine the root is eagerly dug up for human food. The fibres and dark cuticle being removed, the solid part of the root is dried, ground, and made into bread, a little flour being sometimes mixed with it. The accompanying specimen of the bread I got from a man who, with his family, was making his dinner of it. Even when freshly made, the bread is dark brown in colour, and has a sour and earthy taste. Roots of other species of rushes besides that named above, are also collected under the name of "*Mothee*," but not in any quantity.

2. "*Kejra* —The bark of *Acacia leucophlœa*, a tree common in Rajpootana. Bread is made from the ground bark, with or without the addition of flour. It has an astringent bitter taste, and is far from palatable. On the principle of *experimentum in corpore vili*, I made my sweeper fare on it for a day. The poor man suffered a good deal of griping and discomfort in consequence. I found this to be the usual experience for the first few days that either this or *Mothee* are eaten, but ultimately the stomach gets accustomed to the nauseous food. The young pods of several species of *Acacia* are eaten as vegetables even during times of plenty, and such of their seeds as had ripened, were this season ground into a flour, but the quantity available was very small.

3. *Broont* or *Bharoont*.—The seed of *Achyranthes aspera*, a plant common all over the plains of India. When the outer covering of the seed has been removed, as in the specimen which I have forwarded, a wholesome looking grain remains. The bread made from it is very good, and is considered the best of all the substitutes for the usual cereals.

4. *Gokhur-Kantee*.—The capsules of *Tribulus lanuginosus*, of the natural order *Zygophyllaceæ*, a decumbent herbaceous plant of wide distribution in India. From the difficulty of collecting it, this does not take a prominent place as a famine food. The unopened capsules are ground down into a rough kind of meal, but from the small proportion which the contained seeds bear to the tough fibrous tissue of

the seed vessel, the bread, of which a specimen is shown, must be indigestible, non-nutritious and irritating.

5. *Maleecha*.—The seed of a species of grass (probably an *Eleusine*.) I have no sample of the bread made from this ; neither could I obtain any specimens of the plant itself, so as to identify it.

6. *Tilli*.—The refuse of the seeds of *Sesamum orientale*, remaining after the oil has been expressed. This is not made into bread, but is boiled with water into a kind of soup. The specimen, exhibited, was bought from a bunneah in Joudhpore bazar, who was selling it to an eager crowd at the rate of seven seers for a Company's rupee. In Marwar, this substance is largely stored up by bunneahs against seasons of scarcity. It keeps for many years without further deterioration than a darkening of colour.

7. *Seeds of various Cucurbitaceous plants*.—Watermelons of great size grow in a semi wild state in enormous numbers in Bikaner, and some parts of Marwar, during the rains. The seeds of these, of cucumbers, pumpkins, and melons are stored up against scarcity. They make a not unpalatable bread.

With the exception of Tilli cake, none of the articles just enumerated can be had to buy. *Mothee* will not keep, but the others are hoarded up in their houses by the poorer people themselves for their own use when the crops fail. These hoards are however, insignificant, and are soon exhausted during seasons like the present, when in many parts of Marwar no rain whatever has fallen for more than a year.

Botanic Garden, Saharunpore, 25th January, 1869.

The reading of the following papers was postponed ;

4. Contribution towards the knowledge of Indian Arachnoidea ; by Dr. F. Stoliczka.

5. Contribution to our knowledge of Pelagic Mollusca ; by Capt. G. E. Frayer.

6. Topographical features of Assam and their indications ; by Dr. J. Meredith.

LIBRARY.

The following additions have been made to the Library since the last meeting held in March.

. The Names of Donors in Capitals.

Presentations.

Journal Asiatique, No. 44.—THE ASIATIC SOCIETY OF PARIS.

Bulletin de la Société de Géographie, November and December, Vol. XVI.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Proceedings of the Royal Society, Vol. XVII., Nos. 106, 107.—THE ROYAL SOCIETY OF LONDON.

Proceedings of the Royal Society of Edinburgh, Vol. VI. No. 74.—THE ROYAL SOCIETY OF EDINBURGH.

Transactions Royal Society of Edinburgh, Vol. XXV. Part I.—THE ROYAL SOCIETY OF EDINBURGH.

Journal of the Chemical Society, Vol. VI., 2nd series, October, November and December, 1868.—THE CHEMICAL SOCIETY.

Journal of the Bombay Branch of the Royal Asiatic Society, Vol. IX. No. XXV.—THE BOMBAY BRANCH, ROYAL ASIATIC SOCIETY.

Journal of the Statistical Society of London, Vol. XXXI. Part IV.—THE STATISTICAL SOCIETY OF LONDON.

Proceedings of the American Philosophical Society, Philadelphia, Vol. X. No. 77.—THE AMERICAN PHILOSOPHICAL SOCIETY.

Smithsonian Contributions to Knowledge, Vol. XV.—THE SMITHSONIAN INSTITUTION.

Ditto, Report 1866.—DITTO, DITTO.

Department of Agriculture, Report 1866.—COMMISSIONERS OF AGRICULTURE OF THE UNITED STATES OF AMERICA.

Monthly Report, Department of Agriculture, 1866-67.—DITTO DITTO.

UNITED STATES Coast Survey 1863-64.—THE GOVT. OF THE UNITED STATES OF AMERICA.

Memoirs of the Boston Society of Natural History, Vol. I. Part III. N. S.—THE BOSTON SOCIETY OF NATURAL HISTORY.

Annual Report of the Boston Society of Natural History, 1867-68.—DITTO DITTO.

Conditions and doings of the Boston Society of Natural History. May, 1867-68.—DITTO DITTO.

Annual Report of the Trustees of the Museum of Comparative Zoology, 1866.—THE MUSEUM OF COMPARATIVE ZOOLOGY.

The Public Ledger Building, Philadelphia, with an account of the Proceedings connected with its opening, June 20th, 1867.—THE GOVT. OF THE UNITED STATES OF AMERICA.

Rahasya Sandarba, Vol. V. No. 50.—THE EDITOR.

The Calcutta Journal of Medicine, Vol. II. No. 1.—THE EDITOR.

Schleicher's Vergleichende Grammatik.—W. STOKES, Esq.

Grundzüge der Griechischen Etymologie, von G. Curtius.—W. STOKES, Esq.

Histoire Critique de Manichée et du Manicheisme Par M. De Beausobre, Tom I, II.—THE REV. J. LONG.

Krilloff's Fables illustrating Russian Social Life.—THE REV. J. LONG.

Rapports du Jury international de l' exposition universelle, 1867.—FROM THE ENGLISHMAN.

Hafiz MS.—J. AVDALL, Esq.

Report on the Statistics of the Prisons of the lower Provinces of the Bengal Presidency for 1861 to 1865; by F. J. Mouat, Esq., M. D.—THE GOVERNMENT OF BENGAL.

British Burma Education Report, 1867-68; by P. Horden, Esq., B. A.—DITTO DITTO.

Report on the Land Revenue Administration of the Lower Provinces for 1867-68.—DITTO DITTO.

Report on the Government Charitable Dispensaries, Bengal (Proper) for the year 1867.—DITTO DITTO.

Icones Plantarum Indiæ Orientalis, Parts I, II; by Major H. Beddome.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

Purchase.

Revue Archéologique, No. 1, 1869.

Revue des Deux Mondes, 15th January, 1869.

Revue et Magasin de Zoologie, No. 12, 1868.

Tables des Comptes Rendus des seances de l' Academie des sciences, Tome LXVI.

Comptes Rendus, Nos. 15, 26, 1868.

Ditto ditto, Nos. 1, 2, 1869.

The Annals and Magazine of Natural History, Vol. III. No. 14.

The Annuaire des Deux Mondes, Vol. XIV.

The Edinburgh Review, No. 263, January, 1869.

Abhandlungen für die Kunde des Morgenlandes, Vol. V. No. 2.

The Quarterly Journal of Science, No. 21, January, 1869.

The Kāmil of El-Mubarrad, Part V ; by W. Wright.

Exotic Butterflies, Part 69 ; by W. C. Hewitson.

The History of the reign of Shah-Anlum.

The Ayn-i-Akbari MS.

Jacnt's Geographisches Wörterbuch von F. Wüstenfeld. Dritter Band, Zweite Hälfte.

Elements de la Grammaire Assyrienne. M. J. Ménant.

Malisch Leesboek door H. N. van der Tunk.

Nalus Maha-Bharati Episodium, F. Bopp.

Chenef, Nāmeh ou Fastes de la Nation Kourde, F. B. Charmoy.

Der Bundelesh, von T. Justo.

Japanese Grammar ; by J. J. Hoffmann.

Vergleichende Grammatik, Erster Band, F. Bopp.

Reisen in Indien und Hochasien, Erster Band, von H. Schlagintweit.

Geschichte der herrschenden Ideen des Islams, von A. Kremer.

Elements de la langue Malaise, ou Malaye ; par A. Tugault.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MAY, 1869.

The monthly meeting of the Society was held on Wednesday, the 5th instant, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The receipt of the following presentations was announced—

1. From Bábu Udayachánda Datta, Civil Surgeon, Purulia, through Bábu Rájendralála Mitra, a Sanscrit manuscript in the Uriá character, inscribed on palm leaves, containing—

(a.) A copy of the *Paryáyá-ratnamálá*, or a Vocabulary of Synonyms of all articles used in Hindu medicine, compiled by Mádhava Kara.

(b.) A treatise on Indian Materia Medica, entitled by the author *Nirghanṭá rája*, alias *Abhidhána-chudámaní*, but commonly known by the name of *Rájánirghanṭa*. The author's name is differently given at the end of the different chapters of the work, as Narahari, Nara-siṅha and Nṛihari. The manuscript is incomplete, containing only the first seventeen chapters.

2. From the Rev. Dr. F. Mason,—the *Toungoo News*, Vol. V. No. 1.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for, and elected ordinary members:—

Lieutenant-Colonel D. J. F. Newal, R. A., Mean Meer.

R. J. Leeds, Esq., C. S., Chunar.

G. Nevill, Esq., C. M. Z. S.

S. Kurz, Esq.

W. Oldham, Esq., LL. D., C. S.

R. A. Gubboy, Esq.

The following gentlemen are candidates for ballot at the next meeting.

J. Schroeder, Esq.

Proposed by Dr. F. Stoliczka, seconded by Mr. Blochmann.

J. Leupolt, Esq., C. S., Goruckpur.

Proposed by the President seconded by W. Oldham, Esq.

T. W. Rawlin, Esq., B. C. S., Assistant Magistrate, Allahabad.

Proposed by Lieutenant-Colonel A. S. Allan, seconded by Mr. Blochmann.

Bábu Udayachánda Datta, Civil Surgeon, Púrulia.

Proposed by Bábu Rájendralála Mitra, seconded by Mr. Blochmann.

W. C. Bonnerji, Esq., Bar.-at-law, Calcutta.

Proposed by Maulavi Abdul-lateef Khan Bahádur, seconded by the Rev. J. Long.

The following gentlemen have intimated their desire to withdraw from the Society—

Colonel P. S. Lumsden.

T. Martin, Esq.

Mr. H. Perkins' election, in August last, was cancelled at that gentleman's own request.

The Council reported that, on the recommendation of the Finance Committee, they have sanctioned the sale of Government Securities belonging to the Oriental Publication Fund to the amount of Rupees 1500, to pay off Printer's bills.—

That they have adopted the following recommendations of the Philological Committee.

1. The Philological Committee recommend that Mr. J. Beames be permitted to edit the poems of Chand for the Bibliotheca Indica; that he be requested to embody the different readings of the Benares and Agra MSS. in the results of his collation of the two MSS., consulted by him in England, and that the Government of the N. W. Provinces be requested to sanction the lending to Mr. Beames of the Agra MS., now in the keeping of the Society;—that when the copy of the Baidlah MS. is received, it be put at his disposal for collation.

2. The Committee also recommend that the following works be published in the Bibliotheca Indica:—

a. Tándya or Panchaviñsa Bráhmaṇa of the Sáma Veda with commentaries, to be edited by Paṇḍita Anandachandra Vedántavágis'a.

- b.* Láṭhyáyana Sutra with commentaries, to be edited by the same.
- c.* The smaller Upanishads with commentaries, to be edited by Paṇḍita Rámahmaya S'íromañi.
- d.* Gobhila Sutra with commentaries, to be edited by Paṇḍita Chandrakáṇṭa Tarkálankára.
- e.* Váyu Purána, to be edited by Bábu Pratápachandra Ghosha.
- f.* Agni Purána.

And that MSS. of the commentaries of the Gopatha Bráhmaṇa of the Atharva Veda be solicited from the Madras College Library through the Director of Public Instruction, Madras, and that other measures be taken to procure the MSS. of Vridhha Parásara Smṛiti and Vyavahára Tilaka.

Bábu Rájendralála Mitra writes on the subject, as follows :—

“Owing to the departure of Mr. Cowell from this country, the death of our late indefatigable editors, Paṇḍitas Rámanáráyana Vidyá-ratna and Premachánda Vidyávágis'a, and some other causes, the Sanskrit department of the Bibliotheca Indica has been, for the last three years, progressing very slowly, and the expense per annum, instead of coming up to half the amount of the annual grant of Rs. 6000, has seldom exceeded Rs. 2,000. It is desirable therefore, that measures should be taken to give a fresh impetus to the department, by the employment of a body of new editors, and the commencement of a new series of works. This is the more necessary, as the recent Government grant of Rs. 3,000 per annum, renders it obligatory on us, to send such a number of works to press as will involve an expenditure of at least five to six thousand Rupees a year.

“The works now in the press, with three exceptions,* are all near completion, and the excepted works, owing to their nature and the scant leisure of the editors, are not likely to be printed very rapidly, nor cost more than Rs. 1000 a year. Indeed, as a general rule, Sanskrit editors, whether European or Indian, have not, within the last ten years, brought out more than 2 to 3 fasciculi of the Bibliotheca Indica a year, and as each fasciculus, at an average, costs about Rs. 300, it will be necessary to send at least ten differ-

* Taittiriya Sanhitá, edited by Professor Mahes'achandra Nyáyaratna.

Mimáṃsá Darsana, do. do.

Kámandakíya commentary, edited by Paṇḍita Jaganmohána Tarkálankára.

ent works to the press to keep up our expenses to the amount stated above. Accordingly I beg to propose the following, in addition to those which are now in hand, for the consideration and approval of the Philological Committee.

“The works to which our attention should be first directed, according to the Government letter, are the Vedas. Of these a *Saṅhitā* and a *Brāhmaṇa* each, of the Rig and the White Yajurs, have already been published in Europe, and a *Saṅhitā* and a *Brāhmaṇa* of the Black Yajurs are in a forward state in the Bibliotheca Indica; the *Brāhmaṇa* awaiting only an *Index* for completion. Of the *Sāma*, Mr. Stevenson has published a *Saṅhitā*, and of the Atharva, Drs. Roth and Whitney have likewise published a *Saṅhitā*, but no *Brāhmaṇa* of either of those works has as yet been printed. I am of opinion, therefore, that the Committee should first take up the *Brāhmaṇas* of those Vedas.

“According to Śāyana Āchārya eight *Brāhmaṇas* of the *Sāma Veda* are still current,* and of them the *Tāndya*, otherwise called the *Panchaviṃśa Brāhmaṇa* is the largest and most valuable. It embraces the whole liturgy of the *Sāma Veda*, and a great number of traditions which cannot fail to be of interest to the oriental scholar and the Indian historian. MSS. of this work are easily accessible; the Society has two good ones in its possession, and there are four in the Library of the Sanskrit College of Calcutta, one of which is three hundred years old. The Benares College has one, and I expect another from Professor Pickford of Madras. Three commentaries are likewise available; and these, I believe, will suffice for a carefully collated standard edition of the text and comment. Paṇḍita Ānandachandra Vedāntavāgis'ā, the chief priest of the Brāhmya Sabhā, is willing to undertake the work at the same rate at which he has lately edited the *Āsvalāyana Sūtras* for us, (*viz.*, 1 Rupee per page), and I think him to be fully qualified to do justice to it.

“Of the Atharva Veda, the most important, and perhaps the only extant, *Brāhmaṇa* is the *Gopatha*. Professor Kuhn of Berlin has lately urged Mr. Whitley Stokes to exert his influence in getting it printed, and Mr. W. Stokes has written to me, expressing his earnest wish that the Society should have the needful done, if possible.

* Vide my Introduction to the Chhândogya Upanishad, and Max Müller's Sanskrit Literature.

MSS. of the work, however, are very scarce. The Society has an only copy, and that a very imperfect one; and I have lately got another from Benares, but that also is incomplete. The work besides is very difficult to understand, and no editor in Calcutta, that I know of, can do justice to it without the aid of a commentary. It would be necessary, therefore, should the Committee resolve upon printing it, not only to procure more MSS. of the text, but also codices of two or three commentaries. Mr. Burnell of the Madras Civil Service once wrote to me, that he had a copy of the commentary, but as he is now in Europe, I cannot get the loan of it. There is one, however, in the library of the old Madras College, and this may be obtained through the Director of Public Instruction at Madras, or the Secretary to the Madras Government.

“As sequels to the Bráhmaṇas, the Upanishads come next in order. According to the most recent calculations, there are between 130 and 140 of them still extant, of which MSS. between 70 or 80 only, are accessible in Calcutta. When Dárá Shikoh prepared his Persian translation, he could obtain only 60, and Dupetron, in the last century, got no more. The Society has published only 12 out of the number now available, and the remainder therefore may be sent to press to advantage. Professor Max Müller strongly recommended them in a letter published in the Journal for 1862; and as they are mostly very small, not more than 8 or 10 to 20 pages in extent, they are not likely to occupy more than two fasciculi of the Bibliotheca, nor cost at the outside more than 7 to 8 hundred rupees. Professor Rámamaya S'íromani of the Calcutta Sanskrit College is willing to edit them at the usual rate.

“Next to the Vedas stand the Sūtras, and of them I have to propose two, viz. the *Láṭhyáyana* and the *Gobhila-grihya* Sūtras of the Sāma Veda. They are both founded on the Tándya Bráhmaṇa, and for antiquity and interest stand high in rank. MSS. of both are easily accessible, and they may be at once taken up. Pandita Chandrakánta Tarkálankára of Mymensing has offered to edit the last, and I would suggest that his offer be accepted. He is a profound Sanskrit scholar, and will not fail to acquit himself creditably in the undertaking. The work will fill just one fasciculus, and cost about 250 Rs.

“As the *Láṭhyáyana Sutra* is a sort of exegesis of the Tándya

Bráhmaṇa, Pandita Anandachandra will, perhaps, find it convenient to edit it along with the Tándya.

“ Mr. Griffith has lately suggested that the Society should carry on the continuation of the *Mahábháshya* from the place where Dr. Ballantyne dropped it, and Professors Bála S'ástrí and Rájárāma S'ástrí have since expressed their willingness to undertake the work.

“ As to the importance of the work as the great store-house of Sanskrit philology, there can be no difference of opinion. Nor can there be a question as to the propriety of the Society undertaking it, for it is certain that no private enterprize will ever take up so voluminous and at the same time so unsaleable a work. But it will have to be decided whether it ought to be printed from the place where Dr. Ballantyne stopped, or begun from the commencement. Dr. Ballantyne printed about one-third of the work on 808 folia, and it would effect a saving of over 3000 Rs., if we follow him. But on the other hand, he adopted the old Indian *puthi* form, and we must, for the sake of uniformity, give up our handy 8vo., and agree to unwieldy oblong loose sheets which will no where be welcome. Dr. Ballantyne's edition, besides, is out of print, and new purchasers of our edition will be called upon to accept a book which they can never get completed.

“ The portion that remains to be printed will fill about 1600 octavo pages, and cost Rs. 5000. If we print from the beginning, the cost will be about Rs. 8000 payable in five or six years.

“ MSS. of the work are very scarce, except at Benares, where there are several teachers of the *Bháshya*.*

“ Of works on law, I would suggest the *Vridha-parásara Smṛiti* and the *Vyavahára Tilaka* of Bhavadeva. The former is an authoritative text-book, and the latter a scarce and very learned compilation. Should we resolve upon printing them, measures should be taken to procure MSS. I know of only one MS. of the latter in Calcutta.

“ Professor Max Müller, some time ago, recommended the *Váyu Purāṇa* as the oldest and most interesting of the *Purāṇas*. Our Assistant Secretary, Bábu Pratápachandra Ghosha, is willing to undertake it, and as MSS. of it may be had in abundance, I would suggest that it be at

* Since writing the above, I have learnt that the work has already been sent to press at Benares under the auspices of His Highness the Mahārāja of Vizianagaram.

once taken in hand. I have no doubt my young friend is fully competent to do the work well."

3. With reference to the letter of the Government of Bengal, on the publication of catalogues of Sanskrit MSS., the Philological Committee recommend that the plan proposed by Bábú Rájendralála Mitra be adopted ; that a pandit employed at 30 Rs. per month with travelling allowances under the superintendence of the Philological Committee will work very well; that the Rev. J. Long and Bábú Rájendralála Mitra be deputed occasionally to report on the native libraries in the Presidency.

The following is an extract from Bábú Rájendralála Mitra's memorandum on the subject :—

"The proper plan would be to employ a pandit on Rs. 30 a month and travelling allowances, to collect information with reference to the nature and extent of the literary treasures which the libraries in the different *ṭols* and *maṭhs* of the country contain, as also those of private gentlemen and others; and acting upon the information which will be furnished by him and by such educational and other Government officers to whom lists of desiderata may be sent, and who may interest themselves in the undertaking, to depute a member of the Committee to examine and report on such collections as may appear to be most promising. This plan is now being followed with great success by Dr. Bühler at Bombay, and it will, no doubt, prove more effectual and economical than to depute an officer of a higher standing, whose time will be more valuable, and whose movements, more costly. Brahmin Pandits are desirable on another ground. Some priests and *maṭh* keepers are jealous of their literary treasures, and do not allow them to be seen by other than orthodox Hindus. When at Puri lately, I had to prove my orthodoxy, by leaving my shoes beyond the outer gate of the house, by drawing water from a well in the compound with my own hands to wash my hands and feet, by prostrating myself before the high-priest, and by sitting on the bare ground of the compound, before I was allowed to enter the Library of the Sankara Maṭh at Puri. The priest allows none to see the library who does not speak Sanskrit. At such places poor Brahmins will find readier favour than high paid Government officials, or men of wealth and position. I would have suggested two pandits, but the Government grant will not cover the expense of more than one.

“ Rev. Mr. Long will not object to go out occasionally for the purpose of examining native libraries, and I am willing to devote a portion of my leisure to it, if required. By the new rules lately passed by Government, the Wards’ Institution will be in a manner closed for three weeks during the Dusserah, for a month in mid-winter, and for three weeks or a month in May, and, on such occasions, it would be a source of satisfaction to me to proceed to the interior and examine old MSS.

“ It is not necessary now to consider the details of working out the scheme, but as the Government letter contains a blank form according to which the catalogues are to be printed, I deem it necessary to observe that to make the returns really useful, it is desirable to add to the form two more columns, one to contain the salutation in verse (after the usual *Ganesāya namah* which should be omitted) and the first line, and the other the last line and the colophon of every MS. Without these, the difficulty arising from the fanciful character of the names of Sanskrit books, which has been so pointedly noticed by Mr. Stokes, cannot be obviated. At first sight, it may appear that the 4th column, giving the “subject matter and name of author,” would suffice to remove it, but in many cases such information will prove unavailing. For instance, the characters of portions of the Sañhitās or the Bráhmaṇas of the four Vedas, cannot easily be so tabulated as to give the most distant idea of what they really are. I once got four MSS., named “Bráhmaṇas,” and unmistakeably bearing the character of brahmaṇa compositions, which the Paṇḍita, a reciter of the Sāma Veda, assured me were portions of the Sāma Veda, but which, on examination, proved to be chapters of the White Yajur Veda. Unfortunately the discovery was not made until after I had noticed the works in my Introduction to the Chhándogya Upanishad as portions of the Sāma Veda, when Dr. Weber found, from the initial lines published by me, that they corresponded with portions of a work edited by him.*

* As a remarkable instance in point I may note that in a Catalogue of Vedic MSS. in the Library of the Sanskrit College at Benares, published in the last No. of the *Pandit*, I find a MS. (No. 1) described as *Yajur Veda Sañhitā* without any information as to whether it is one of the two known Sañhitās of the Yajus, the Taittirīya of the Black Yajus, or the Vájasaneyi of the White Yajus, or a new work. A *Rig-bráhmaṇa* also, in the same way, occurs in it as distinct from the *Aitareya* and the *Kaushitaki*, though no other Bráhmaṇa of the Rig is known to be extant. Initial lines in such cases would afford great help to scholars.

“ Again several works are known by one common name, such as *Muktāvali*, *Ratnāvali*, &c., and as the names of their authors are not often known, or not given in the MSS., they cannot but be mistaken. Synonyms too are in common use to indicate the same work ; thus the *Venisañhāra* of Bhaṭṭanārāyana is in the North West often called *Venisañvaranam*, and the well known *Chandi* of Bengal is, in Kashmir, and in some parts of the North West, called *Durgāpāṭ* or *Durgā*. In such cases, the initial line can be our only guide.

“ Should the Committee agree with me as to the importance of having the two additional columns above suggested, it would be necessary, for the sake of uniformity, to bring them to the notice of Government, in order that they may be sanctioned, and the Governments of Madras, Bombay, &c. may be apprised of the same.

“ With regard to copyists, it would be more economical to employ section-writers at 4 Rs. the thousand slokas of 32,000 letters, than paying them by the month. Recently I had occasion to employ a man at 15 Rs. a month to transliterate a MS, from Uria into Nāgarī, and he took 2½ months = Rs. 37-8 to finish the work. Had I employed him at the usual rate of Rs. 4 the thousand slokas, he could not have got more than 10 Rs. for the job. The quality of the work would have been in either case very much the same. Of course there should be an exception in the case of the pandit who may be employed to amalgamate the several lists that will be received from time to time, and prepare copies for the press. Such works cannot be well done by section-writers and, therefore, a man on monthly wages should be engaged. He should devote his leisure hours to the copying of MSS.”

The following communications were received—

From Mr. A. C. Carlyle, curator of the Riddell Museum at Agra, an account of the reading of an inscription, different from that formerly recorded by the same author.

A letter from the Government of India, Home Department, forwarding a copy of the papers regarding the geological action on the coast of Kattiwar and the Runn of Cutch.

Indian Proverbial Philosophy by F. S. Growse, Esq., M. A., Oxf.

The Librarian reported the receipt of the following manuscripts purchased for the Society by Bābu Rājendralāla Mitra during a late tour in

the North West. The collection includes 188 works, no less than 103 of which relate to or are portions of the Vedas. A great many of them are no doubt *paddhatis* or manuals for the performance of ceremonies, but they are therefore not the less useful, inasmuch as those ceremonies have now become obsolete, and a knowledge of their rituals is necessary for a correct understanding of the Vedas. Next to the Vedas the Smritis are the best represented in the collection, there being 21 MSS. on the subject. Then of the Vedānta there are 12 MSS.; of the Nyāya 7; of the Mīmāṃsā 8; of Grammar 5; of the Tantras 9; of Poetry 10; of Astronomy 4; and of the Purāṇas 3. Most of the MSS. are new to the Library, and the few that are duplicates are desirable on account of their age, accuracy or completeness. Several of these have been read by generations of Pāṇḍitas, and have had the benefit of their corrections.

सङ्ख्याः ग्रन्थनामानि । ग्रन्थकारनामानि शास्त्रनामानि । अक्षरभेदः पत्रसंख्याः

१२२८	अष्टभाष्यविवरणम्	अयतीर्थभिक्षुः	वैदिक.,	न०	७२
१२२९	प्रमाणसूत्रशटीका	अपतीर्थभिक्षुः	वैदिक.,	ना०	४९
१२३०	सामप्रयोगः खण्डितः	.. ..	वैदिक.,	ना०	१०
१२३१	मिताक्षरा दृढदारण्यकव्याख्या	नित्यानन्दा त्रिमसुनिः	वैदिक	ना०	८०
आरम्भे पत्रद्वयं ६ पत्रपरि १२					
पत्राणि ५९ पत्रपरि १७ पत्राणि च न सन्ति ।					
१२३२	धर्मप्रकाशेनगमनप्रयोगः	भट्टशङ्करः	स्मार्तः	ना०	२४७
१२१ पत्रोपरि १२२ पत्रं नास्ति					
२२६ पत्रोपरि ५ पत्राणि च न सन्ति					
२४२ पत्रोपरि १ पत्रं नास्ति					
१२३३	प्रपञ्चसारसङ्ग्रहः	.. ..	तान्त्रिक	ना०	१०६
१२३४	पिण्डपिष्टप्रयोगः	चन्द्रचूडभट्टः	स्मार्तः	ना०	६१
उत्तरचन्द्रचूडीयः					
१२३५	सुहृत्समाला	रघुनाथः	ज्योतिषी	ना०	६६
१२३६	मन्त्रभागवतं	नीलकण्ठः	तान्त्रिकं	ना०	४४
१२३७	दृष्टचन्द्रादयः	भास्करकविः	शान्दसः	ना०	२२१
१०० उत्तरे ७ पत्राभावः					
शेषखण्डितः					
१२३८	ऐतरेयारण्यकभाष्यम्	सायनाचार्यः	वैदिकं	ना०	२५

सङ्ख्याः । ग्रन्थनामानि । ग्रन्थकारानामानि । शास्त्रनामानि । अक्षरभेदः पञ्चसङ्ख्या

१२३९ मृच्छसूत्रम् भाङ्ख्यायनः वैदिक,, ना० २८

षोडशपञ्चोत्तरं

एकपञ्चं खण्डितं

शेषखण्डितम्

१२४० सूत्र्यादिपञ्चायतन-

स्थापनपद्धतिः

दिवाकरं

वैदिक,,

ना० २७

१२४१ स्थालोपाकप्रयोगः

कमलाकरभट्टः धर्मशास्त्रं

ना० २९

१२४२ आपस्तम्बोददर्शपूर्णमास-

प्रयोगः

वैदिक,,

ना० ४८

१२४३ ब्रह्मानुष्ठानपद्धतिः

नारायणभट्टः

वैदिक,,

ना० ४९

१२४४ आपस्तम्बोदजातकर्मा

बोपभट्टः

वैदिक,,

ना० २९

१२४५ संस्कारकौस्तुभे ग्रन्थ-

अनिरूपणम्

अनन्तदेवः

वैदिक,,

ना० ६७

१२४६ शान्तिशारे वास्तुशान्तिप्रयोगः दिनकरभट्टः

स्मार्तः

ना० २८

१२४७ तर्कप्रकाशः

शेष खण्डितः

नैयायिकः

ना० ५१

१२४८ प्रयोगतन्त्रप्रायश्चित्तप्रकरणम्

वैदिक,,

ना० ५०

१२४९ जलभेदटीका

४ पञ्चं नास्ति । ९ पञ्चं नास्ति श्रीकल्याणरायः वैष्णव,,

ना० १३

१२५० सन्यासपद्धतिः शेषखण्डिता

स्मार्त,,

ना० २४

१२५१ न्यायमिहान्तमञ्जरीदीपिका

श्रीकण्ठः

न्याय,,

ना० ५९

१२५२ आयुष्कामेष्टिः

वैदिक,,

ना० ७

१२५३ वैराग्यशतकं खण्डितम्

भट्टहरिः

काव्य,,

ना० २७

१२५४ गेयगानं

४० । ४१ पञ्चं च नास्ति

वेद,,

ना० ५६

१२५५ पावमान्

वेद,,

ना० २३

१२५६ शिवताण्डवपूर्वभागः

शिवः

तन्त्र,,

ना० ६१

१२५७ साङ्ख्यतत्त्वकौमुदी

वाचस्पतिमिश्रः साङ्ख्य,,

ना० ७६

१२५८ तत्त्वचिन्तामणौ

प्रत्यक्षखण्डः । ९ । १० पञ्चाभावः गङ्गेशः

न्यायशास्त्र,,

ना० ८८

१२५९ इष्टकापूरणभाष्यम्

याज्ञिकदेवः

वैदिक,,

ना० ८६

१२६० सङ्ख्येयशरीरकं

अम्बयार्थप्रकाशिकाटीकासहितः

रामतीर्थः टीं

२२ एतन्नाभावः

सर्वज्ञः मूल । वेदान्तिकः ना० ७९१

सङ्ख्या । ग्रन्थनामानि । ग्रन्थकारानामानि । शास्त्रनामानि । अक्षरभेदः पञ्चसङ्ख्या

१२६१	विष्णुभक्तिकल्पलता	काव्य,,	ना० १०
१२६२	रुद्रविधानपद्धतिः	काशीदीक्षितः तान्त्रिक,,	ना० १०१
१२६३	कविराजकौतुकं	कविराजगिरिः स्मार्त,,	ना० २०८
१२६४	गुणशिरोमणिटीका	रामकृष्णभट्टाचार्य	
	चक्रवर्ती	न्यायशास्त्र,,	ना० ११२
१२६५	अनुमानखण्डालोकः	जयदेवमिश्रः	न्यायशास्त्र,, ना० ४२६
१२६६	प्रायश्चित्तमुक्तावली	वैजनाथः	धर्मशास्त्र,, ना० ४२६
१२६७	आपस्तम्बप्रायश्चित्तसूत्रम्	आपस्तम्बः	वैदिक,, ना० २१
१२६८	आपस्तम्ब श्रौतसूत्रम्	आपस्तम्बः	वैदिक,, ना० २८
१२६९	शिवभक्तिसुधारणवः	काशीनाथः	पौराणिक,, ना० १५
१२७०	कृत्यरत्नावली	रामचन्द्रभट्टः	धर्मशास्त्रं ना० ८५
१२७१	सोमप्रयोगः अग्निष्टोमप्रयोगः	.. ..	वैदिक,, ना० ११९
	आपस्तम्बीयः		
१२७२	वैधायनसूत्रे आधानसोम-.. ..		
	प्रकरणम्	वैदिक,,	ना० ५४
१२७३	महाव्रते अष्टावाकपदार्थः	वैदिक,,	ना० १२६
१२७४	भागवतव्यवस्थितिः	नीलकण्ठः	पौराणिक,, ना० १२
१२७५	आहुकल्पम्		धर्मशास्त्रम् ना० ४
१२७६	विवाहादिकम्पणा प्रयोगः	.. ..
	शेषखण्डितः	वैदिक,,	ना० ५१
१२७७	क्षिरण्यकेशोयान्येष्टिप्रयोगः	केशवभट्टः	वैदिक,, ना० ३८
१२७८	वैधायनधर्मशास्त्रम्		
	चतुर्थप्रश्नपर्यन्तम्	वैधायनः	ना० ४५
१२७९	ईशोपनिषद्भाष्यटीका	.. ..	वैदिक,, ना० १५
१२८०	मीमांसाकुतूहलम्	रघुवीरः	मीमांसा,, ना० ५५
	शेषखण्डितः	कमलाकरः	
	पञ्चदशपत्रं अर्द्धखण्डितं		
१२८१	सोमप्रयोगः आपस्तम्बीयः	.. ..	वैदिक,, ना० १२५
१२८२	कुवलयानन्दः		
	९ पत्रं आदिखण्डितम् आर्भण्यैदीक्षितः	अलङ्कारिक,,	ना० ७०
१२८३	काभाष्या पञ्चशतकं	.. ..
	मूकपञ्चको वा	काव्य,,	ना० ६६
१२८४	ऐतरेयभाष्यटीका		
	१० म पत्रं नास्ति	ज्ञानामृतः	वैदिक,, ना० २४

सङ्ख्याः । ध्वन्यामनि । ध्वन्यकारानामनि । शास्त्रनामानि । अक्षरभेदः पञ्चसङ्ख्या

१२८५ शान्तिसारः

६३ पञ्चोपरि ४ पञ्चाणि न सन्ति

१०१ पञ्चोपरि १ पञ्च'नास्ति दिनकरः स्मार्तः,, ना० २०८

१२८६ वैधायनीयमहाग्निप्रयोगः

६२ पञ्चोपरि १ पञ्च'नास्ति वासुदेवदीक्षितः वैदिकः,, ना० ८२

१२८७ वाग्निष्टपददोषिका अद्वयारण्यः वैदिकः,, ना० ११२

१२८८ शौचसूत्रम् वैदिकः,, ना० ३१

१२८९ चातुर्मास्यपद्धतिः अनिरुद्धः वैदिकः,, ना० ५१

१२९० वाधायनीयकौकिल भैरवः

सौचामणी प्रयोगः वैदिकः,, ना० २२

१२९१ कात्यायनीयमृच्छपरिशिष्टे

वापीकूपतडागदेवायतनप्रतिष्ठाकामदेवः वैदिकः,, ना० १०

१२९२ कौषीतकी ब्राह्मणोपनिष दोषिका

आदि १ पञ्च' नास्ति शंकरानन्दः वैदिकः,, ना० ३४

१२९३ मृच्छपरिशिष्टपद्धतिः कामदेवदीक्षितः वैदिकः,, ना० ८

१२९४ व्यवहारतत्वः

प्रथमपञ्चनास्ति नीलकण्ठभट्टः धम्मशास्त्रं ना० ३१

१२९५ दशरात्रप्रयोगः विष्णुगूढनामा वैदिकः,, ना० ६९

१२९६ सर्वदेवप्रतिष्ठा

वैधायनीया स्मार्तः,, ना० २०

१२९७ त्रिभाष्यरत्ने प्राति-

शास्त्रविवरणम् वैदिकः,, ना० ६३

१२९८ लघुवार्त्तिकटीका

(खण्डिता) मीमांसा ना० १२

१२९९ वरणविधिः

वैदिकः,, ..

१३०० सिद्धान्तसिद्धांजनव्याख्या

रत्नतूलिका भास्करदीक्षितः वेदान्तः,, ना० ९५

१३०१ रत्नतूलिकाव्यायां

श्रुताञ्जनविवरणम् भास्करदीक्षितः वेदान्तः,, ना० २४६

१३०२ सिद्धान्तसिद्धाञ्जनः कृष्णानन्दयतिः वेदान्तः,, ना० १२३

१३०३ प्रयोगचिन्तामणिः

६९ पञ्चोपरिखण्डितं

तदुपरि २१ पञ्चः ।

तदुपरि २३ पञ्चाणि अनन्तभट्टः स्मृतिः,, ना० १२३

सङ्ख्याः । ग्रन्थनामानि । ग्रन्थकारनामानि । शास्त्रनामानि । अक्षरभेदः पञ्चसङ्ख्य

१३०४	वामकेश्वरतन्त्रे				
	मन्त्रकोषः	महादेवः	तन्त्र,,	ना०	२०
१३०५	नलोदयः	कालोदासः	काव्य,,	ना०	१२
१३०६	सामवेदीय गेयगानं				
	१४८ पञ्चोपरि १ पञ्चं नास्ति		वेद,,	ना०	२५६
१३०७	दीक्षाविधिः		वैदिक,,	ना०	६७
१३०८	ब्राह्मणम्				
	(शेषखण्डितम्		वेद,,	ना०	५७
१३०९	ब्राह्मणम्				
	आदि १ पञ्चखण्डितम्				
	शेषखण्डितम्		वेद,,	ना०	६२
१३१०	सामवेदीयमुत्तरार्चिकं				
	९ प्रपाठकपर्यन्तं		वेद,,	ना०	७४
१३११	ऊहगाणं				
	शेषखण्डितं				
	चतुर्विंशति व्याख्याया		वेदः	ना०	४७
१३१२	आन्धिकः	भट्टोजोदेक्षितः	धम्मशास्त्रं	ना०	२९
१३१३	अग्न्याधानपद्धतिः.. . . .				
	छिरण्यकेशिस्तुत्रानुसारिणी		वैदिक,,	ना०	६८
१३१४	फलचन्द्रिका	यशोधरभिन्नः	ज्योतिःशास्त्रम्	ना०	८०
१३१५	चातुर्मास्यस्तुत्रम्	वोधायनः	वैदिक,,	ना०	१४
१३१६	आरामोत्सर्गप्रयोगः		वैदिक,,	ना०	९
१३१७	फलचन्द्रिका				
	आदिखण्डितं		ज्योतिःशास्त्रं	ना०	१४
१३१८	धम्मसिन्धुसारः				
	आद्ये ४ पञ्चाणि न सन्ति काशेनोपाध्यायः धम्मशास्त्रं		ना०	६४	
१३१९	वोधायनस्तुत्रम्				
	अन्वारम्भणीयं		वैदिक,,	ना०	१९
१३२०	द्वादशमहावाक्यं	शङ्कराचार्यः	वेदान्त,,	ना०	२३
१३२१	महानाम्नीप्रयोगः	कमलाकरभट्टः	वैदिक,,	ना०	४७
१३२२	द्वादशमहावाक्यम्	पूर्णानन्दशिष्यः	वेदान्त,,	ना०	२४
१३२३	कोकिलस्मृतिः	कोकिल ऋषिः	स्मृति,,	ना०	१०
१३२४	दर्शपौर्णमासव्याख्या		वैदिक,,	ना०	४४
१३२५	चातुर्मास्यगोपालकारिका	गोपालः	वैदिक,,	ना०	१६
१३२६	गोपालकारिका	गोपालः	वैदिक,,	ना०	१५

सङ्ख्याः । ग्रन्थनामानि । ग्रन्थकारनामानि । शास्त्रनामानि । अक्षरभेदः पञ्चसङ्ख्याः				
१२९०	यज्ञतन्त्रसुधानिधिः ..	..	..	वैदिक,, ना० ८
१२९८	नीतिशतकं			
	सटीकम्	भर्तृहरिः	काव्य,,	ना० १५
१२९९	शृङ्गारशतकम्	भर्तृहरिः		
	सटीकम्		काव्य.,	ना० १८
१२९०	सामवेदीयतर्पण-	..	..	...
	पिप्पविधिः			
	शेषखण्डितः		वैदिक,,	ना० १६
१२९१	मन्यासपद्धतिः ..	..	..	सति,, ना० ६१
१२९२	कालीकुलक्रमः			
	अष्टमपञ्चाभावः	महादेवः	तन्त्र,,	ना० ९९
१२९३	गुह्यसिद्धितन्त्रं	महादेवः	तन्त्र.,	ना० ४७
१२९४	सोमप्रयोगः			
	आद्ये ४४ पञ्चाणि सन्ति	बद्रदेव	वैदिक,,	ना० १९१
१२९५	द्वादशाहहोत्रं महाव्रतं .	..	..	..
	सुत्याहनिप्रयोगसहितं		वैदिक,,	ना० ९१
१२९६	चातुर्मास्यहोत्रप्रयोगः ..	..	..	वैदिक,, ना० १४
१२९७	दशरात्रः ..	..	..	वैदिक,, ना० ५५
१२९८	वैधायनप्रायश्चित्तं			
	शेषखण्डितं	वैधायनः	वैदिक,,	ना० १४
१२९९	न्यायसिद्धान्तमञ्जरो	श्रीकण्ठः	न्याय,,	ना० ४८
	तर्कप्रकाशस्यटीका			
१२४०	भाट्टदीपिकायां प्रथमा			
	ध्यायस्य चतुर्थपादः	श्रीखण्डदेवः	मीमांसा,,	ना० ९८
१२४१	भाट्टदीपिका			
	पथ्यन्त समाप्तम्	श्रीखण्डदेवः	मीमांसा,,	ना० ४००
१२४२	भाट्टदीपिकाप्रथमाध्या-			
	यस्य चतुर्थपादः	श्रीखण्डदेवः	मीमांसा.,	ना० ९२
१२४३	भाट्टदीपिकाद्वितीया-			
	ध्यायस्य चतुर्थपादः	श्रीखण्डदेवः	मीमांसा,,	ना० २४
१२४४	भाट्टदीपिका तृतीयाध्याय-			
	स्य अष्टमः पादः	श्रीखण्डदेवः	मीमांसा,,	ना० ९६
१२४५	राधाविनोदः	श्रीरामचन्द्रः	काव्य,,	ना० ११

मङ्ख्याः । ग्रन्थनामानि । ग्रन्थकारनामानि । शास्त्रनामानि । अक्षरभेदः पत्रसङ्ख्याः			
१२४६	नैष्कर्म्यसिद्धिचन्द्रिका	ज्ञानान्तममित्रः वेदान्त,,	ना० ३८
१२४७	साङ्ख्यतत्त्वकामुदीटीका	वाचस्पतिः साङ्ख्य,,	ना० १९
१२४८	आहचन्द्रिका	वैजनाथः धर्मशास्त्रम्	ना० १०३
१२४९	संस्कारनिर्णयः	चन्द्रचूडः धर्मशास्त्रम्	ना० १२१
१२५०	नानाशास्त्रार्थनिर्णयः	श्रीवर्द्धमानः धर्मशास्त्रम्	ना० ९५
१२५१	वेदान्तकल्पतरुः		
	द्वितीयाध्यायस्य चतुर्थपादः अथयदीक्षितः वेदान्त,,	ना० ५७	
१२५२	वैष्णवानुष्ठानपद्धतौ		
	नृसिंहपरिचर्या श्रीकृष्णदेवः पौराणिक,,	ना० ४९	
१२५३	निबन्धतौ षष्ठसप्तमा		
	ध्यामः । अष्टमाध्यायस्य		
	चतुर्थपादः खण्डितः		
	८ । १० । ११ अध्यायनोक्तिः ।		
	तदुपरि १२ । १३ । १४ । १५ ।		
	१६ । १७ । अध्यायपय्यन्तम् उपाचार्यः वेदव्याकरण,,	ना० ३१८	
१२५४	मुमुक्षुसारसङ्ग्रहः	वेदान्तः न,, मु०	७५
१२५५	सिद्धान्तलेशसङ्ग्रहसारः	मोमांसा ना,, मु०	३८
१२५६	विवाहमेलवाणीविधिः	स्मार्त,,	ना० ३६
१२५७	कृत्यचिन्तामणिः	शिवरामः धर्मशास्त्रम्	ना० २३०
१२५८	सामवेदसंहिता	वेद,,	ना० ६०
१२५९	सामवेदसंहिता		
	पूर्वाचिकं	वेद,,	ना० ५८
१२६०	प्रयोगचिन्तामणिः		
	आदि अन्तखण्डितः अनन्तभट्टः	वैदिक,,	ना० १९
१२६१	अग्निष्टोमः		
	शेषखण्डितः	वैदिक,,	ना० ४४
१२६२	तृप्तिदीपव्याख्या		
	आद्यन्तखण्डिता श्रीरामकृष्णः वेदान्त,,	ना० ६१	
१२६३	वेदान्तसूत्रव्याख्या		
	आद्यन्तखण्डिता	वेदान्त,,	ना० १०
१२६४	यज्ञकुण्डचक्राणि	वैदिक,,	ना० १०
१२६५	सर्वतोभद्रचक्रम्		१
१२६६	दुर्गावतीप्रकाशः		
	समयालोका वा पद्मनाभः धर्मशास्त्रं	ना० २२२	

चक्षुः । पञ्चनामानि । पञ्चकारनामानि । शास्त्रनामानि । अक्षरभेदः पञ्चसङ्ख्या

१४६७	अक्षमानम्								
	१९ प्रपाठक पय्यनम् आदिखण्डितम्					सामवेद,,	ना०	१०१	
१४६८	तैत्तिरीयवार्तिकम्								
	शेषखण्डितम्					वैदिक,,	ना०	३९	
१४६९	शब्दपरिचयेदरहस्यम्	..	..	..	..
	आद्यन्तमध्यखण्डितम्					न्यायशास्त्रं	ना०	१०४	
१४७०	सोमाग्नौधप्रयोगः	..	..	..	..	वैदिक,,	ना०	१	
१४७१	परिभाषामूत्रम्					भारद्वाजः	वैदिक,,	ना०	३
१४७२	हैनप्रयोगः	..	..	..	..
	सवनप्रयोगश्च					वैदिक,,	ना०	४३	
१४७३	मर्माधानप्रयोगः	..	..	..	..	वैदिक,,	ना०	९	
१४७४	पुंसवनप्रयोगः	..	..	..	..	वैदिक,,	ना०	९	
१४७५	जातकस्मप्रयोगः	..	..	..	..	वैदिक,,	ना०	४	
१४७६	सोमन्तोन्नयनप्रयोगः	..	..	..	..	वैदिक,,	ना०	७	
१४७७	नामकस्मप्रयोगः	..	..	..	..	वैदिक,,	ना०	३	
१४७८	अन्नप्रासनप्रयोगः	..	..	..	..	वैदिक,,	ना०	५	
१४७९	षष्ठीपूजाविधिः	..	..	..	..	वैदिक,,	ना०	९	
१४८०	निष्क्रमणप्रयोगः	..	..	..	..	वैदिक,,	ना०	९	
१४८१	कर्णवेधप्रयोगः	..	..	..	..	वैदिक,,	ना०	९	
१४८२	प्रवासविधि	..	..	..	..	वैदिक,,	ना०	३	
१४८३	चूडाकस्मप्रयोगः	..	..	..	..	वैदिक,,	ना०	६	
१४८४	अवस्थाधानम्	..	..	..	..	वैदिक,,	ना०	१८	
१४८५	वेदारम्भप्रयोगः	..	..	..	..	वैदिक,,	ना०	१	
१४८६	उपनयनप्रयोगः	..	..	..	..	वैदिक,,	ना०	३८	
१४८७	विवाहपद्धतिः	..	..	..	..
	चतुर्थीकस्मपय्यन्ता					वैदिक,,	ना०	३९	
१४८८	गान्दीश्राद्धप्रयोगः	..	..	..	..
	आद्ये १३ पत्राणि खण्डितम्					वैदिक,,	ना०	२३	
१४८९	अभिषेकप्रयोगः	..	..	..	..
	खण्डितः					वैदिक,,	ना०	४	
१४९०	अनुष्ठानम्	..	..	..	..	वैदिक,,	ना०	१	
१४९१	पुण्याहवाचनम्	..	..	..	..	वैदिक,,	ना०	५	
१४९२	अग्निष्टोमः, मधुपर्कः	..	..	..	..
	आद्ये १० पत्राणि सन्ति					वैदिक,,	ना०	१३	

सङ्ख्या । ग्रन्थनामानि । ग्रन्थकारनामानि । शास्त्रनामानि अक्षरभेदः पञ्चसङ्ख्या

१३८३ अपराध सुन्दरस्तोत्रम् शङ्कराचार्यः काव्यम् ना २

१३८४ तन्त्ररत्नम्

४ चतुर्थ्याध्यायावधि

८ नवमाध्यायपर्यन्तम्

१० दशमाध्यायस्य प्रथ-

मपादोक्तितदुपरिनास्ति

११। १२। अध्यायोक्ति ६३

तन्मध्ये १८ पत्रापरि ४२१

१ पत्रं नास्ति सारार्थमित्रः तन्त्र,, व० २४०

१३८५ वेदान्तकल्पतरुपरिमलः अण्ण्यदोक्षितः वेदान्त,, २८

१ प्रथमाध्यायस्य २८ पत्रं

आद्यमं खण्डितम्

२ तृतीयाध्यायः सम्पूर्णम् ११०

१०८ पत्रापरि १ पत्रं नास्ति

तदुपरि ७४ पत्रमध्ये १ पत्र ७४

खण्डित २१२

१३८६ काशिकावृत्तिः

१ प्रथमाध्यायस्य १ पादः

२ अध्यायस्य चतुर्थपादः.. .. . ४८

तृतीयाध्यायः सम्पूर्णः २८

१ प्रथम अध्यायस्य चतुर्थपादः

२ प्रथमाध्यायस्य चतुर्थपादः.. .. . ४८

तृतीयाध्यायः सम्पूर्णः.. .. . १०

१ प्रथमाध्यायस्य द्वितीयतृतीयपादः २२

६ पष्ठाध्यायस्य १ पत्राणि व्याकरण,, ना० २०

तदुपरिनास्ति

१३८७ आम्बलायन सूत्रवृत्तिः

६ अध्यायपर्यन्त १ खण्डः

७ अध्यायावधि १२ अध्याय ७०

पर्यन्त २ द्वितीयखण्डः नारायणः वैदिक,, ना० ८६

१३८८ बोधायनोपनिषद्दोषिका

तृतीयाध्यायपर्यन्ता द्वारकानाथः वैदिक,, ना० ६२

१३८९ शिखा

११। १२ पत्रं नास्ति वैदिक,, ना० १५

संख्याः । पञ्चानामानि पञ्चकारनामानि । शास्त्रनामानि । अक्षरभेदः पञ्चसङ्ख्या

१४००	यज्ञप्रायश्चित्तम्	वेधायनः	वैदिक,,	ना०	१२
१४०१	वेणीसम्बरम्	वेणीसंहारः	काव्य.,	नां०	११
१४०२	आपस्तम्बोपाकर्मप्रयोगः		वैदिक,,	ना०	१५
१४०३	प्रतिशास्त्रम्				
	द्वितीयाध्यायस्य				
	षष्ठपटलपर्यन्तम्				
	आद्ये २ पत्रं नास्ति			ना०	५४
१४०४	मौजामहोः				
	१८ अध्यायपर्यन्तम्		वैदिकः	ना०	१७
१४०५	तैत्तिरीयश्रुतिवर्तिकम्		वैदिक,,	ना०	६७
१४०६	रूपावलिः				
	संख्याः		आकरण,,	ना०	११
१४०७	पशुवन्धः वेधायनीयः		वैदिक,,	ना०	१४
१४०८	शिक्षा		वैदिक,,	ना०	८
१४०९	कालज्ञानम्		ज्योतिष,,	ना०	४
१४१०	प्रातिशास्त्रम्	कात्यायनः	वैदिक,,	ना०	१६
१४११	समासचक्रम्		आकरणम्	ना०	९
१४१२	इन्द्रोपन्यः		वैदिक,,	ना०	८
१४१३	क समासचक्रम्		आकरणम्	ना०	४
१४१४	अ नारायणोपनिषद्		वेद,,	ना०	७
१४१५	नारायणोपनिषद्	:	वेद,,	ना०	३
१४१६	वाक्यसुधासौचम्	शङ्कराचार्यः	काव्य,,	ना०	१

The following papers were read—

I. *Notes on an Arian inscription*, by E. C. Bayley. Tracings of the inscription were laid on the table. They were taken from a copper plate found by Capt. Stubbs, at Sue Vihār, near Bhāwalpūr and forwarded to Mr. Bayley. Application for the loan of the plate will be made in order that a fac-simile of it may be published in the Journal together with Mr. Bayley's reading. A most interesting point connected with this inscription is that the names of the Macedonian months were in use in some parts of India.

II. *Notes on Western China*; by T. T. COOPER, Esq.

If we include in Western China that part of Tibet, lying to the east of the Kinchar Kiang, and extending to the banks of the Tar-tow-

ho, then with the golden sands of the Yarlang and Kinchar rivers, the silver, tin and copper mines of Western Yunnán, and the mineral wealth of Szchuan, we speak probably of one of the richest countries in the world, while the prolific soil of these two provinces proclaim Western China to be the garden of Central Asia.

The veil of mystery which has for so long surrounded this part of China (unlifted as yet save by the individual efforts of the good Abè Hüc), seems with the advance of European nations in their march of civilization about to be torn aside, to give light to the millions of Central Asia. When the fierce Mongol roaming in quest of plunder shall halt, commanded by the powerful voice of Western knowledge and science, when the superstitious teachings of the crafty Láma shall give place to the voice of God, as spoken to man through the great Teacher Christ, then the fruits of the country shall give forth their increase, and the people be freed from the yoke of tyranny.

As in speaking of "countries" of the world, it is generally understood that we mean parts of the earth's surface inhabited by distinct races or peoples, and draw the boundaries generally as near as possible round the space inhabited by each race or people, being guided in doing so by the distance to which their language and customs extend. In defining the Western boundaries of the great province of Szchuan we must commence about Lat. $30^{\circ} 20'$ N. and Long. $102^{\circ} 5'$ E. Travelling down the west bank of the Tar-tow-ho, and continuing almost due south until we strike the Yangtzu, about 80 miles west of the Min river, all the country to the west of this, following the bend of the Kinchar Kiang to where it turns north,—and crossing the Lantsan Kiang, Now-Kiang and Irrawadi rivers in a straight line to the borders of Assam, and north of this point to the borders of Tibet which commence about Lat. $27^{\circ} 45'$ N., and thence in a N. E. direction back to the Tar-tow-ho,—is inhabited by tribes tributary to China and Burmah. Amongst the former are:—

The *Lo-Lo*s inhabit a strip of country to the west of the Tar-tow-ho, as far as the borders of Tibet; and then to the south of that as far as the Yangtzu the country is occupied by a tribe of Tibetans, a name indiscriminately given by Chinese in the west to all the self-governing tribes beyond the borders; then from the boundary of Tibet, commencing at

Artenze, situated about Lat. $27^{\circ} 50'$ N. and Long. $96^{\circ} 30'$ E., and following the banks of the Lan-tsan-Kiang as far south as Lat. $26^{\circ} 40'$ N. are the following tribes : Mosos, Leisus, Mooquors, Yatzus, Chudzus and Trefans. Then between the same latitudes the country between the Lan-tsan-Kiang and Now-Kiang rivers is inhabited by the wild and powerful tribe of Ludzus who are the terror of all the tribes above enumerated. Beyond the Now-Kiang to the west as far as the borders of Assam, the tribes are mostly tributary to the kingdom of Burmah.

Of the three great highways leading from the eastern seaboard to Western China, *viz.* from Canton to Yunnán, through the provinces of Kwang-tung and Kwangse : from Shanghai to Szchuan *via* the Yangtzu, through the provinces of Kiang-tzu, Ngan-hoei and Hoopa ; and from Pekin to Chentu, the capital of Szchuan through the provinces of Petcheli-chan-si and Chen-si, that of the Yangtzu, with the advantage of water-carriage, is certainly the most important, leading from the east.

We all know how that by the magnificent steamers, at present running between Shanghai and Hankow, a traveller is hurried away through the two great provinces Kiangtzu and Ngan-hoei, and in the space of three days landed in Hankow, having without a single effort beyond enjoying to his utmost the comfort and hospitality on board these splendid vessels, travelled some 600 miles ; but few know what it is to exchange these floating palaces for the native crafts used as a means of conveyance between Hankow and the upper waters of the Yangtzu. There may be said to be two distinct classes of conveyances between Hankow and Szchuan—the one used exclusively for passengers and the other for cargo. Under the first class the Mandarin Junk, a large unwieldy craft of nearly one hundred tons burthen, highly ornamented and gilded inside, and used almost exclusively by Mandarins travelling up and down the river with their families, may be said to take first rank as to comfort ; and next to it, a boat about 50 tons burthen called Passenger Junk ; and, lastly, the little boat generally a long canoe-shaped despatch craft, some 40 feet in length, covered, with bamboo mats, and propelled by two men in the bow and one in the stern. These boats, built of wood which grows in the district of Wa Chien are of such toughness as renders them almost indestructible, and are by far the quickest means of conveyance, but at

the same time most inconvenient for creeping along the rocky banks of the river ; they are continually thumping on sunken rocks in such a manner that at a very early period a voyage to Szchuan is calculated to destroy the nerves of the most courageous traveller.

Amongst the cargo carrying craft, that known as the Szchuan Junk is conspicuous from its great size and comfortable little cabin near the stern, in which the adventurous Szchuan merchant, during the three months' voyage from Hankow to Chung Ching, spends his days, inhaling the energy-destroying fumes of opium. The next most conspicuous are the charcoal and straw boats which are larger than the so-called Szchuan Junks, are loosely put together and loaded to a depth that would deter any one, but a careless indifferent Chinaman, from travelling in them ; these are sent down to Hankow with charcoal, fruit, and a peculiar kind of straw, used in the manufacture of spill paper, and on arrival are broken up and sold for fire-wood, the expense of taking up so large a boat against the current amounting to more than the price of a new one in Szchuan.

Having described the means of conveyance on this great artery of commerce, I proceed to describe the road itself as far as Chentu, the capital of Szchuan. Embarking at Hankow, the traveller suddenly finds himself (after passing the city of Hanrang on the left bank) ascending the swift current of the Han, and after a day's tedious journey up this river enters the chain of lakes through which he follows a westerly course for 8 or 10 days, as far as Sha-su on the left bank of the Yangtzu ; having, by taking the lake route, cut off the bend of the great river above Hankow. Embarking at Sha-su on board a river boat, he ascends the broad and swift current as far as Ichang on the left bank, passing which a few miles above he enters the Ichang gorge, the first of the celebrated Yangtzu gorges, and leaves behind the plains of Hoopeh which here give place to hills, running generally N. E. and S. W., increasing in height and splendour, until they attain a climax in the snowy mountains of Tibet. Continuing up this gorge some 20 miles passing ever and anon deeply laden Szchuan Junks, rowed by boatmen, whose wild but cheerful song runs in a hundred echoes along the precipitous sides of the gorge, he comes to the first rapid, and having been safely towed up this, he may be said to have undergone his initiation in travelling the upper Yangtzu. Passing on

from this, a few days' journey brings him to Pah-tung, the last town in Hoopeh, famous for its potatoes; and here for the first time he sees coal of an inferior quality, deficient in bitumen and very slaty. Passing on from this through the Lukan gorge in a few days he reaches Quifoo, the principal customs station in the province of Szchuan and meets perhaps his first annoyance in the insolence and extortion of the custom house satellites whom he is obliged to fee pretty heavily before he can get away. This city, from its importance, as a customs station, and the monopoly of a large salt trade takes foremost rank amongst the cities on the Yangtzu between Hankow and Chung Ching, and from the good coal procured in great quantities in its neighbourhood deserves the attention of Western nations as a Port of call for steamers.

Having got rid of the customs officials here, the traveller continues on through the Mitau gorge and then beyond, for the first time, sees in the river banks a specimen of the beauty and fertility of the garden-like Szchuan. The banks where they slope down to the water are covered with rich crops of sugar and higher up in the background snug little whitewashed cottage-like houses, nestled among the hills, throw round the country a home-like air; and in early spring the country inland is white with the poppy flower. Amidst country like this, varied occasionally by the solemn grandeur of gorges, the traveller in about 40 days, after leaving Hankow, arrives at Chung Ching, the great trade emporium of Western China.

To all lovers of travel, the journey up the Yangtzu to Chung Ching affords a pleasant field for observation and excitement; its dangerous rapids, whirls and eddies, and magnificent awe-inspiring gorges, lend to it that charm which enchants the enthusiastic traveller, and serves to enliven what would otherwise be a tedious voyage. And then to the geologist, the field for observation is most extensive, especially along the gorges, where the perpendicular rocks, forming their sides, show to perfection the geological formation of the country; in many of the gorges will be seen a reddish grey sandstone with its exposed surface glazed, as though it had been polished with black lead. This sandstone attracted the special attention of Captain Blakiston, the first explorer of the Yangtzu, and he speaks of it as one of the greatest geological curiosities he met with during his expedition, and

I have certainly never in any part of the world seen the same feature in sandstone, while as far as I was able to observe, the stratification is very varied, consisting of Tufás, red and gray sandstones, granite, limestone, shale and many others, the name of which, being uncommon, I am ignorant of; red sandstone and a kind of loose flaky magnesian limestone appearing the most common; the latter in many places, however, I hesitate to call limestone, though it is more like that formation than any other I know of.

On arriving at Chung Ching, the traveller may know at once by the number of junks, bustling activity of the people and general well-to-do look of the city,—to say nothing of the never ending stream of coolies carrying merchandize,—that he has arrived at a great trading mart. Raw cotton from the lower Yangtzu is continually being discharged from the junks lying along the river, while foreign piece goods meet his eye at almost every turn, nearly every other shop displaying these goods for sale. Raw cotton and cotton piece-goods form the principal imports, but foreign glass and crockery-ware, judging from the number of shops engaged in the sale of these articles, appear to find a large market in Chung Ching, while sugar, hemp, tobacco, silk and native medicines (this last article in incredible quantities) are the principal exports.

Chung Ching besides being the great Western mart of trade, is financially the city of greatest importance in the west of China. Here the pay of the Frontier army is regulated, as also the pay of the Government staff of Szchuan. The customs dues of the whole province find their way here, and so great is the fame of Chung Ching wealth in China, that the specie in common use there is at a great premium, and the merchants have their agents north, south, east and west throughout the empire. Such is the famous Chung Ching, the Liverpool of Chinese trade, and it is to be hoped that Western commerce and energy will soon find their way to her, unfettered by the extortion and exclusive pride of worthless and ignorant mandarins.

Leaving Chung Ching and continuing up river, a journey of 7 days, brings the traveller to Swifoo (Souchowfoo), a large city, situated at the mouth of the Min river, of considerable importance as a tribute station to which many of the tribes, immediately to the west of the Min annually repair with tribute; it is also the last city

of consequence on the upper Yangtzu which ceases to be navigable about 160 miles above this point. Entering the Min at this city, and following its broad waters for 5 days, the famous city of Kiating is reached, the centre of the so-called vegetable wax and silk country. This city, famous throughout China, not so much for its great trade, (as it is really little more than a transit station), but as the resort of pilgrims to the great Omeeshau, the centre of Bhuddism in China, two days' journey from Kiating to the west, the fame of its temples and the blessing givings of gods, draws thousands of pilgrims from all parts of the empire, Tibet and even Burma. The Chinese say that this large peaked mountain ever shows on its sides the four seasons of the year: spring, summer, autumn and winter, and this is not improbable, as the mountain is clearly visible at Kiating and appears to be of enormous height.

From this city the river branches off to the east and north-west, that to the west taking the name of Tar-tow-ho, and that to the east King-Kiang, following which for 5 days Chentu, the great capital, situated in the fertile plains of Szchuan, is reached. This city containing on a rough estimate about 800,000 inhabitants is the Paris of China, the numbers of civil and military Manderins located here, are astonishing, and give to the place quite an aristocratic air; it, however, has little trade, save in articles of luxury, such as embroidered silks, (from the district of Kiateng), musk from Tibet, jade from Yunnán and a local supply of foreign articles from Chung Ching. At this capital, the route from Peking joins the grand route from Szchuan to Lassa, the jurisdiction of the viceroy extending to Bathang and nominally to the Tibetan capital, Lassa.

I have described Chung Ching, the great central trade mart of Western China, and the route from this to the capital of Szchuan which runs through the richest part of the province, and in doing so, I should have mentioned that at Ludzow, a large city some 5 days' journey above Chung Ching, there is an enormous trade in Salt and Lead, the former finding a market at Chung Ching principally, and the latter at Kiateng; the cities of Wootung Chow-che-wachin and Kiateng on the Min and Kung-yar-chen, on the Tar-tow-ho, about 50 miles above the latter city forming the outlets by which the silk, wax, tobacco and sugar of this rich part of the province find their way to Chung Ching.

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Previous to the Mahomedan war which broke out in Yunnán some 14 years since, an enormous trade was carried on between Burmah and Taili, the present Mahomedan capital of that province. Starting from Bhamó on the Irrawadi river, hundreds of caravans consisting of thousands of mules laden with raw cotton and cotton piece-goods annually found their way to Taili, but until within the last 3 years that trade has been entirely destroyed; since then, however, a fair trade has sprung up, receiving but a slight check in the beginning of the year 1868, owing to a civil war which broke out amongst the wild tribes on the borders inhabiting the hill country which forms the boundary between Yunnán and Burmah. This route in influencing the trade of Western China will soon become a serious rival to the trade at present existing between the eastern sea-ports and Szchuan, and can only be successfully combated by the opening of Chung Ching as a port to which steamers may run; but, in the event of steamers plying to Chung Ching, Burmah can never hope to influence the trade of Szchuan. Considering the great wealth of Szchuan, it is but natural to suppose that the appearance of the country and people, would indicate in some measure its prosperity, but beyond the luxuriant crops always to be seen throughout the year, such is far from being the case; even in the most thriving districts of Chung-ching, and Chentu, every city shows dilapidated and ruined walls. Their public buildings, such as temples, theatres, massive gateways and yamuns, originally built in magnificent architectural style and ornamented in a manner indicating the most lavish expenditure, all show decay and neglect; even the costly and massive stone archways, built over high-roads by virtuous widows as a memorial of their departed husbands' goodness, are in decay and suffering from neglect, as though they, like every other thing of beauty in China, were works of another people. As a rule, the inhabitants appear little better off in a worldly point of view, than those of other provinces, and like the people of the Eastern lands, they are but a sad reflection of an utterly corrupt government. Bribery and falsehood have usurped the seat of truth and justice among them, a perfection of subtlety is the highest aim of their education and reason, a monstrous self-pride and selfishness have long since destroyed that sympathetic feeling which binds man to his fellow, and strengthens a people against the injustice of a

tyrannical government. The frightful extortion and absolute power of the mandarins, and their satellites, have broken their spirit so completely, that they have become utterly indifferent to the fate of their country. And lastly the curse of opium and religious superstition has brought them to a condition, the contemplation of which is truly lamentable. So conspicuous is the general aspect of ruin throughout the province, that I felt it at all times sad to realize the fact, that I was travelling amongst a people, the works of whose forefathers only stand to mark the decay of their progeny, and the gradual decline of the great Chinese Empire. China of to-day is but the remnant of a past age. The cause of internal decay hangs heavy over her; she is but the expiring embers of a once bright and beautiful fire. Shall the spark of truth and knowledge that is required to rekindle her into brightness come from the West? Let the great nations that at present busy themselves so much about her welfare, consider this question, for of a truth—the saving of China *from herself*—is no easy matter to be accomplished!

The cultivation of opium in China has of late become such a serious question in connection with the demand for the Indian drug, that a few remarks on this subject may not be considered out of place here.

Hüe in his work on China makes little or no reference to the cultivation of opium, and a Reverend Father who resided in Szchuan for thirty years assured me, that when he first visited that province, and for many years after, the growth of opium was unknown, and until of late years, Szchuan has depended on Yunnán and India for its supply. The Mahomedan war cut off supplies from Yunnán, which opium is more highly esteemed than either the foreign drug, or that produced in Szchuan, and when this supply failed about twelve years since, it caused a greater demand for the foreign drug, and consequently an increased price, which soon had the effect of increasing the cultivation of the drug in Szchuan, until at this moment it forms with sugar, rice and tobacco, the principal cultivation of the province.

The present extensive cultivation of the drug in Szchuan, and the revival of cultivation in Yunnán during the last four or five years, may probably account for the sudden decrease in demand for the Indian drug in Western China.

His Excellency, the Nepálese ambassador brought with him to Chentu several hundred boxes of Indian opium, which he was unable to dispose of, save a few boxes bought by Chung Ching merchants for shipment to Hankow, and I believe that I was rightly informed that the people dislike the Indian drug on account of its great strength. Chinese Mandarins, coming from Lassa, invariably bring opium with them into China, purchasing it of the Nepálese merchants coming from Khatmandoo, and disposing of it to Chung Ching merchants who, I presume, find a market for it east of Szechuan.

Joining at Chentu, the great highway to Tibet, and travelling west three days through the plain of Szechuan, Yarchu city is reached; the soil of the plain is most prolific, yielding annually two crops of sugar and rice. Beyond Yarchu for two or three days, the road leads through a beautiful hilly country, very rich in iron and copper, while from this point crossing the Yangnin range of mountains to the Tar-tow-ho, the country gradually becomes a wild and sterile chaos of large peaked mountains, yielding to the inhabitants of this wretched country scanty crops of potatoes and Indian corn, upon which they principally subsist. Crossing the Tar-tow-ho at Ludinchow by means of a chain suspension bridge, 340 yards span, built about 80 years since, three days travelling in a north west direction along frightful precipices, brings the traveller to Tontseanloo, the border town of Tibet.—Here, as for the past three days, he finds himself amongst a different people, while the climate has changed to excessive cold, the surrounding hills being covered with snow for eight months during the year.

Up to this point, chairs are used as a means of conveyance, but before the traveller can prosecute his journey into Tibet, he must purchase mules, tents, watch-dogs, and a ten days' supply of food for himself and cattle. Thus equipped, he leaves Tontseanloo and in two days crosses the Jeddo range of mountains; but how different to the peaked masses of limestone in the neighbourhood of Tar-tow-ho are these mountains! For the first day the country is nothing but huge granite boulders as far as the eye can reach, but next day, on arriving at the summit of the range, every thing is changed before him, there is a sea of high grassy ranges without a vestige of a tree,—large herds of yaks and sheep dot the sides of the mountains in black and white

patches,—the wild, still grandeur of such a scene is an ample reward for the heavy and toilsome ascent. Continuing on through these ranges occasionally descending into valleys covered with yellow and white pine forests, in eight days the Tibetan town of Lithang is reached, situated on a very high plateau, so high that the traveller finds breathing very difficult, and after resting a day to recruit his larder with butter and flour, he is glad to leave Lithang with its gilded monasteries, containing about 3500 Lámas; and for the next ten days he travels through a fearful country of snowy mountains, the lower ranges of a bare limestone-like formation, the higher peaks covered with perpetual snow, towering into the heavens to an enormous height. During these fatiguing ten days, he crosses the Sambar and Taso snowy mountains and at the western foot of the latter, in a beautiful fertile valley, reaches Bathang, a Tibetan town, like Lithang famous for its Lama monasteries.

Bathang is the last town of importance in the eastern kingdom of Tibet which is nominally subject to China; there is a Chinese mandarin here who, in concert with the Lámas, guards the borders most zealously against the intrusions of outsiders. Thus far from Chentu the Szchuan Capital, we have travelled the grand highway leading from China to Lassa the capital of Tibet, and it is by this route, that some three or four million pounds of tea are annually sent to Lassa from the district of Yarchu. The tea of a very coarse description is carried on pack saddles by yaks and mules to Lassa, a journey occupying about four months.

From Bathang there is another route which leads to Assam, untravelled as yet by Europeans.—

Before the Mahomedan war cast its gloom over the fertile province of Yunnán, and while the hundreds of trading caravans annually travelled between Bhamó on the Irrawadi and Talifoo, the present Mahomedan capital of that province, they created a trade, the fame whereof has lived till this day, and the revival of which should form, if not the first, at least the second most important question occupying the commercial mind of England to-day. This question has already received so much attention, that I need not observe that, while it will confer immense benefit on the British possessions in Burma, if re-opened, it cannot be of immediate importance to our Indian possessions, and deep in this conviction I have

been engaged for the last year in seeking a route by which India and Assam could communicate more directly with China. That such a route does exist, I have ascertained, namely, from Bathang to Zy-yu, a Tibetan town at the foot of the Himalayas on the east, thence crossing the mountains to Sudyu on the Brahmaputra, a distance altogether of 180 miles, or thereabouts. This route leaving Bathang leads south-west crossing the Kinchar Kiang, Lantsan-kiang and Now-Kiang rivers, to the Tibetan monastery of Bonga, thence north-west to the Tibetan village of Song-nga, Kui-dzong in the south Pomi country, and thence west a few days to Zy-yu. (The Pomi country alluded to is part of a province of Tibet, subject to the government of Lassa, the northern half being only religiously dependent on the Grand Láma). The road is travelled by mules carrying cargo, and occupies some twenty days between Zy-yu and Bathang, but at this moment from the warlike nature of the Mishmi tribes, and the fear entertained by the Lámas and people of Tibet for foreigners, it presents many difficulties to peaceful intercourse, while the severe climate will probably confine communication to eight months during the year. Of this, however, I am not certain, nor am I certain that this route has not been travelled by the Catholic Missionaries in earlier years.

I have spoken of the river Yang-tzu as the great trade artery of China, and will conclude these notes with a few remarks on its great annual rise and fall.

The original cause of the summer floods which annually deluge the plain of Hoopah, Nganhwei and Kiang-tzu, forming the valley of the Lower Yang-tzu, takes rank amongst the first scientific problems yet to be solved by western energy and learning.

That the snows and rains of the country drained by the Yar-loong-kiang and Kin-char-kiang, influence the rise of the Yang-tzu, is without doubt, but that they are the sole cause of the floods, appears doubtful.

While travelling from Wei-si in Yunnán towards Chung-ching through Bathang, Tatseanloo and the Tar-tow-ho country, I everywhere encountered floods and signs of floods, the like of which, so the people told me, had not been known for twenty years. Part of the town of Artenze on the northern border of Yunnán had been washed away, and many parts of the road which I had travelled in May and June had become channels for terrific mountain torrents, and to the east of Tatseanloo

we passed the sites of numerous villages that had been washed away entirely ; yet on striking the Yang-tzu at Swifoo in October, I was astonished to find the river had been three feet below its last year's level, though it was higher for the time of the year than last year. The rains which caused such unusual destruction in the country I have alluded to, commenced in June, and subsided towards the end of July, or beginning of August, so that the waters in the plains, which in November were higher for the time of year, than has been known for a long time, could scarcely have been influenced by the rains of the mountains, which had subsided by the middle of August, and thus I am led to infer that the cause of these floods in the plains is purely local ; perhaps the Tung-ting Lake and the Han River are the great feeders of the lower Yang-tzu.

A long discussion followed the reading of this paper.

Col. Thuillier drew the attention of the meeting to a few of the most interesting points in the account which Mr. Cooper has given of his exploration of Western China. These researches are most valuable not only in a commercial point of view, but also as bearing upon the geography of the country. He (Col. Th.) considered it the duty of every one, who had followed the explorations of former travellers in the same parts of the country, to remind Mr. Cooper of the perilous and dangerous nature of the route which he had selected for his further explorations. However, Mr. Cooper's experience in those districts, was no doubt an extensive one, as clearly shewn by his travels, and he (Col. Th.) desired to express the hope that Mr. Cooper will be able, in spite of all the enormous difficulties, to enlarge in every respect our knowledge of that country.

Col. Th. begged to propose that the special thanks of the meeting be given to Mr. Cooper for his very interesting account of his travels, and also an expression of their best wishes for the success of his further explorations.

Dr. J. Anderson in seconding Col. Thuillier's proposition, wished to ask Mr. Cooper, if he had obtained any information regarding the sources of the Irrawadi. Dr. A. put this question because he had made special inquiries during his stay at Bhamó regarding the upper course of that river, and had been informed that the largest branch runs in a north-easterly direction. Capt. Wilcox saw, from the Patkoi range,

what he believed to be the Irrawadi, and described it as an insignificant stream. Dr. A.'s informant, however, described the eastern branch as a large river, running between high banks, and the western as a smaller one. Dr. A. was inclined to believe that what Wilcox saw was merely this branch, and not the main stream which most probably rises far to the north of Capt. Wilcox's position.

While at Momein Dr. A. also made particular enquiries regarding the size of the Salween, the course of which was indicated by the lofty Saychan range of hills, about 15 to 20 miles from Momein. The information was to the effect that the river was a very small stream. The Camboja, however, was described as a broad and deep river between high and precipitous banks, and the Pekin highway is said to cut it by a chain suspension bridge. The Salween thus not stretching so far to the north, as is usually represented on our maps, it is possible that the large streams, heard of by Mr. Cooper, may have been the eastern branches of the Irrawadi. Mr. Cooper's opinion on this subject, Dr. A. thought, would be very valuable.

Col. Th.'s proposition was favorably responded to by the meeting.

Mr. Cameron made a few observations regarding the people of Eastern Assam: he believed that travelling in those districts is most dangerous, especially in the country of the Mishmi tribes.

Mr. Cooper said that he had no direct observation, or reliable information, as to the upper course and the sources of the Irrawadi, but he himself was of opinion, that its sources lie much further to north, than they are usually indicated on our maps. On a small route map, which he (Mr. Cooper) had lately prepared, he marked the course of the Irrawadi much above the latitude of the Patkoi range towards the North, coming from Eastern Tibet.

Mr. Cooper thanked the meeting for the kind reception and encouragement which he had received, and said that he is ready and prepared to meet any difficulties, and undergo any hardships to do justice to the task, which he had undertaken.

Col. Thuillier considered the discovery of the sources of the Irrawadi and Bráhmputra as one of the greatest geographical problems of the present time, but thought that Mr. Cooper's object was not exactly the discovery of the sources of rivers, but simply the opening of a direct route from India to Western China. He (Col. Th.) also stated for the information of the meeting that the pandits, trained by the

Trigonometrical Survey are at the present engaged in those parts of Tibet, and he doubted not that they will bring us ultimately a great deal of the information required on those geographical problems.

Dr. Anderson said that he had put the question as one of general interest, to elicit information on the subject; he himself held no opinion one way or another regarding the supposed relation of the Tsampô and the Bráhma Putra.

The Hon'ble Mr. Phear referred to the symmetry and the parallel structure of the mountain-ranges in their north-southern extensions, as exhibited on the map, and asked what the average height of these mountains in those districts of Western China was. He thought, that considering the great elevation of the country from which the Irrawadi comes, the river must either pass through a very deep gorge, or be a succession of great falls.

Mr. Cooper thought the elevation of the mountains, through which the Irrawadi flows, to be about 7,000 feet.

Dr. Anderson observed that the average height of the hill-ranges south of Bhamó was 5,000 feet, although some of the peaks were as much as 7,000 feet.

The President, in closing the discussion in which the Hon'ble Mr. Phear, Dr. Anderson, Mr. Cooper, and several other gentlemen took part, observed that the proposition brought forward by Col. Thuillier had been already so well responded to by the meeting, that it would be unnecessary to put it in any more formal way from the chair. He (the Pres.) repeated the thanks and the good wishes of the Society, and joined in the general expression of hope that Mr. Cooper's explorations might be followed by that success which his untiring zeal, courage and perseverance in prosecuting his object fully entitled him to expect. Considering the problem which Mr. Cooper had placed before him,—the opening of a direct communication between India and China and Central Asia,—the President thought that the shortest route should be examined before any other were selected.

III.—*Contribution towards the knowledge of Indian Arachnoidea*;
by DR. F. STOLICZKA, (*Abstract*).

The author observed that few branches of Zoology had received in India so little attention as the study of the *Arachnoidea*. They unfortunately belonged to one of those classes of animals against which

people seem to have a natural horror of feeling, when they come in contact with them. No doubt the dark places which some inhabit and the dangerous bite of others, have brought down this contempt upon the whole class. And still there are few animals more important and useful in the economy of nature, where an adequate balance between all classes of beings must exist, than the Arachnids. They only live upon insects, and destroy a very large number of some, which do much damage and harm to other animal and vegetable life. Indeed, when we look upon their occasionally fantastic forms, there is not much more variety that imagination could invent, than we meet among the *Arachnoidea*; and as regards variations of shade, tasteful distribution and brilliancy of colours, they do not remain much behind the beauties of nature, the birds and butterflies.

It was at first the intention of the author of this paper only to collect materials for a monograph of the Indian SCORPIONIDÆ, because they are better known to most people than the spiders which, being generally harmless, are as a rule passed by unnoticed. The materials for such a monograph, which ought to give a sufficiently perfect account of the group, are, however, only gradually forthcoming, but with the aid of friends, it is to be hoped that the work can soon be brought to a conclusion.

Meanwhile, a large number of other *Arachnoidea* has been collected, and among them some are very interesting forms, new to science; out of these the author had made a selection of species, representing some of the principal divisions, or tribes, of the class. The species are described with all the necessary details, and of all of them the required illustrations will be given. The object of this arrangement is principally to direct attention to the variety of forms, and to aid those who may feel inducement to take an interest in the study of *Arachnoidea*. It hardly needs to be repeated that few other branches of Indian Zoology offer such a large number of interesting novelties to one who wishes to assist in the study and revelation of the animal forms surrounding us.

The species described in the present paper are *Gagrella signata* and *atrata*; *Galeodes orientalis*; *Telyphonus Assamensis*; *Thomisus pugilis*, *Th. elongatus*, *Th. Peelianus*; *Gastracantha Canningensis*; *Meta gracilis*; *Tetragnatha iridescens*; *Nephila angustata*; *Epeira (Argyopes)*

stellata, *Ep. (Arg.) mammillaris*; *Ep. Brahminica*, *Ep. hirsutula*; *Dolomedes longimanus*; *Hersilia Calcuttensis*; *Spharus viridanus*, *Sph. similis*; and *Scytodes propinqua*.

The reading of Capt. Fryer's "Contribution to Pelagic Mollusca" and Dr. Meredith's "Topographical features of Assam," was postponed. The President announced the new elections and the meeting separated.

LIBRARY.

The following additions have been made to the Library since the last meeting held in April, 1869.

Presentations.

*** (Names of donors in capitals.)

Bulletin de la Société de Géographie, January, 1869.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Bijdragen tot de Taal-landen Vekenkunde van Nederlandisch Indie Tweede deel, 2nd en 3rd stuk; Derde Deel, 1st en 2nd stuk.—THE SOCIETY.

Proceedings of the Royal Society, Vol. XVI. No. 108.—THE ROYAL SOCIETY OF LONDON.

Proceedings of the Geographical Society Vol. XIII. No. 1.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

Rahasya Sandarbha, Vol. V. No. 51.—THE EDITOR.

Das Achtzehnte Kapitel des Wendidâd; by Dr. M. Haug.—THE AUTHOR.

Maleisch Leesboek, door H. N. Van der Tunk.—THE AUTHOR.

Discours Prononce a l'Ouverture du Cours de Cochinchinois; par Abel des Michels.—THE AUTHOR.

Report on the Administration of Mysore 1867-68.—THE GOVERNMENT OF BENGAL.

Ditto on the Administration of the North Western Provinces for 1867-68.—The same.

Annual Report on the Administration of the Province of British Burma for 1867-68.—The same.

Annual Report on the Operations of the Post Office of India for 1867-68.—The same.

Report on the Administration of the Hyderabad assigned district for 1867-68.—The same.

Annual Report on the Administration of the Madras Presidency of 1867-68.—The same.

Report on the Administration of the Panjab and its Dependencies for 1867-68.—The same.

Report on the Administration of Coorg, for the 1867-68.—The same.

Selections from the Records of Government North Western Provinces 2nd Series Vols. I. No. 3, 4.—THE GOVERNMENT NORTH WESTERN PROVINCES.

Memoirs of the Geological Survey of India, *Palæontologia Indica*, Vol. V. 7—10.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

Punjab Plants, comprising Botanical and Vernacular names, and uses of the most of the trees, shrubs and herbs of economical value, growing within the Province.—PUBLIC WORKS DEPARTMENT, PUNJAB.

Purchase.

The Vishnu Purana Vol. IV.; by H. H. Wilson.

Calcutta Review for April, 1869.

Comptes Rendus Nos. 1, 2, 3, 4, 5, and 6, 1869.

Journal des Savants, December, 1868 and January, 1869.

The Ibis Vol. V. No. 17.

Revue Linguistique, Tom. 2nd Fas. III.

Revue Archéologique No. 2, 1869.

Revue des Deux Mondes, from to 1st February 15th February, 1869.

Exchange.

The Athenæum for December, 1868, and January, 1869.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JUNE, 1869.

The Monthly Meeting of the Society was held on Wednesday, the 2nd instant at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced—

1. From Mr. A. M. Cameron—A copy of a lecture on Persian Poetry and Romantic Poets of Persia.

2. From the Government of India, in the Foreign Department—A copy of a Journey to Kashgar, in 1858, by Capt. Valikhanof, translated by Mr. R. Michell.

3. From Mr. H. von Schlagintweit-Sakünlinski—New data regarding the death of A. von Schlagintweit, (Extract from the reports of the mathematical and physical class of the Bavarian Academy of Science, München, 1869).

Mr. H. von Schlagintweit states that, from information which he received last autumn from a Musalman servant, named Abdullah of Umritsur, he had been able to ascertain much more accurately the date of the death of his unfortunate brother, than it had been possible to do from previous dates. Abdullah writes that Mr. Adolph v. Schlagintweit's camp was attacked by Valí Khán in front of the city of Káshgar, and that the traveller fell in the struggle. Abdullah was thrown in prison, and the next day he observed the new moon of the Muharram. He further states that the day on which he was imprisoned was a Chahár-shambih, or a Wednesday. From

these and some other circumstances Mr. H. von Schlagintweit concludes that his brother Adolph fell in the morning hours of the 26th August, 1857.

4. From M. Cantopher, Esq., two copper coins of Antoninus Pius and Galba, taken out of a small lake in the vicinity of Tournay, in the south of Belgium, and presented to Mr. Cantopher by the Curator of the Archæological Museum of the Jesuit's College in that city.

On the motion of the President, the thanks of the Society were voted to Mr. Cantopher.

The following gentlemen duly proposed and seconded at the last meeting were balloted for, and elected ordinary members,—

J. Schroeder, Esq.

J. Leupolt, Esq., C. S.

F. W. Rawlin, Esq., B. C. S.

Bábu Udayachanda Datta, Purúlia.

W. C. Bonnerji, Esq.

The following gentlemen are candidates for ballot at the next meeting.

Lient. J. C. Ross, R. E., proposed by Mr. A. Cadell, C. S., seconded by Mr. W. Irwine.

A. V. Nursing Rao, Esq., Vizagapatam, proposed by Mr. Blochmann, seconded by Dr. Stoliczka.

C. J. Lyall, Esq., Balandshahar, proposed by Mr. Blochmann, seconded by Dr. Stoliczka.

Robert Gordon, Esq., C. E., Henzadag, Burma, proposed by Dr. J. Anderson, seconded by Mr. H. Blochmann.

S. Pell, Esq., proposed by Dr. Stoliczka, seconded by G. Nevill, Esq.

A. M. Markham, Esq., C. S., proposed by Capt. A. D. Vanrenen, seconded by Col. Gastrell.

J. Coates, Esq., M. D., proposed by H. B. Medlicott, Esq., seconded by Dr. T. Oldham.

The following gentlemen have intimated their desire to withdraw from the Society: Capt. W. J. W. Muir, A. E. Russell, Esq., C. S.

The President communicated the following letters, addressed from the Secretary to the Government of the Punjab to the Superintendent of the Geological Survey of India.

Copy of a letter from Offg. Deputy Commissioner, Bunnoo, to Offg. Commissioner and Superintendent, Derajat Division, No. 135, dated 28th March, 1868.

In reply to his No. 75, dated 8th instant, forwarding for report, copy of No. 1239, dated 3rd instant, from Secretary to Financial Commissioner, Punjab, has the honor to report as follows :

2. The earthquake which occurred here during the night of November 10th last caused the moisture, which generally lies at a depth of about 2 feet beneath the surface, to rise to about 6 inches from the surface. This phenomenon was general throughout all the light sandy tracts of Murwut. In consequence of it numbers of villagers who, on account of the drought, had for the time deserted their villages, returned, and, with those who had remained, at once commenced ploughing and sowing for Rubbee.

3. Undersigned was in Murwut himself shortly after, and himself tested the truth of the reports which had spread throughout the district. The sandy surface of the soil exhibited its usual dry parched appearance, but on scraping the surface a little, the moisture was at once rendered apparent. The rise in the level of the moisture can only be attributed to the earthquake, as the day before it took place the moisture lay at its usual depth below the surface, and on the morning after the earthquake it had everywhere risen from 1 foot to 18 inches above its usual level.

Note by R. E. Egerton, Esquire, Financial Commissioner, Panjab.

The report regarding the effects of the earthquake in Bunnoo on moistening the soil, which appeared in the newspaper lately quoted from Bombay Gazette, I think, seemed to me a repetition of the reports which were prevalent there in November to the same effect, and which came up again from Bombay after 3 months, as if the news was fresh.

When I was in Bunnoo in November, there was a rumour that the soil of Murwut had been rendered moist by the earthquake which had recently occurred, and that the people had been able to sow their spring crops though no rain had fallen. I asked about this from the people at Lukkee in Murwut, and they said that no such effect had been really produced by an earthquake, but that people

had sown their spring crops, though there had been no rain, because the time for sowing was nearly past, and they were afraid of losing their crop if they did not sow. On hearing this, which seemed to me a rational explanation, I did not make any further enquiry. Mr. Thorburn mentioned that the report had been prevalent, but did not say how it arose. There was an earthquake certainly, and the spring crops in Murwut were largely sown though no rain fell. It was not difficult to invent the fact of unusual moisture having been developed by the earthquake.

Had there been any very general or perceptible moisture of the ground really developed by the earthquake, I am sure, I should have heard of it in my journey through the Bunnoo district.

It is just possible that there may have been another earthquake attended by such a phenomenon recently, but as I have heard quite lately from Colonel Graham, Mr. Thorburn, and Mr. Priestly, who none of them mention it, and as the report on the weather and the crops up to 21st February have not noticed it, I think that the earthquake of November must be that alluded to.

The following communications were read—

- I. *A contribution to our knowledge of Pelagic Mollusca; by Capt. G. E. FRYER, Madras Staff Corps,—communicated by Dr. STOLICZKA (Abstract).*

The paper contains a summary of observations made during two voyages from England to India viâ the Cape of Good Hope. Capt. Fryer first gives a general account of the organisation of *Pteropods*, then comments on their habits and mode of life, and on the geographical distribution. A table shewing this distribution is added, and also a map on which the localities are marked, with the number of species captured at each of them. In the present communication Capt. Fryer treats only of the *Thecosomata* which are furnished with an external though very thin shell. The author found 23 species in the Atlantic Ocean, 23 in the Indian, 11 in the Southern, and 11 in the Bay of Bengal. A few species appear to be peculiar to each of these oceans. The map shews that comparatively the largest number of specimens was obtained south and south-east of Ceylon. The species *Hyaleu tridentata* (var. *Forskulii*), *H. teniobranchia* and

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H. affinis, which by some authors were considered to be identical, are believed by the author to be distinct, and figures of the shells and animals are given. In conclusion Capt. Fryer appends directions for collecting these interesting animals during sea voyages.

Mr. Baxter bore testimony to the very great accuracy and care evinced by Capt. Fryer, in his paper, particularly as to the times of the appearance and disappearance of this very interesting class of Molluscs. He took the opportunity of dissenting from the placing *H. teniobranchia* as a distinct species, believing it would prove to be a variety of *H. tridentata*; the absence of specimens was a great bar to a correct conclusion. *H. mucronata*, although described by Quoy and Gaimard, was entirely ignored by Rang and Souleyet.

The thanks of the Society were voted to Capt. Fryer for his interesting contribution.

II.—*Notes on the topographical features of Assam, and their indications*; by J. MEREDITH, M. D. (*Abstract*).

Dr. Meredith proposes to explain the formation of the valley of Assam by the well-known theoretic geological hypothesis of the contraction of the earth's surface, this being, Dr. M. says, the chief cause of depressions and elevations. Dr. M. thinks that there are indications of glacial action at Bishnath-Dolpore and at Tezpore, similar to those which Prof. Agassiz has recorded as occurring in Brazil. Dr. M. gives then an elementary explanation of certain ravines and swampy places, called *Hoolahs* and *Peetanies* by the natives of Assam. He also says that a good deal of the unevenness and disturbances of the ground are due to seismic action.

During the reading of the paper, Dr. Stoliczka observed, regarding Prof. Agassiz' explanation of the formation of the Amazon valley by glacial action, that a short time ago he had received information from Mr. W. Gabb to the effect, that marine shells had been found in those clayey beds which were supposed by Prof. Agassiz to be the result of glacial action. This occurrence of marine fossils clearly shews, that at least some portion of these deposits is of marine origin.

Mr. H. B. Medlicott stated that the rocks at Tezpore which Dr. Meredith most likely supposes to be moraines, are rocks in situ, and that he (Mr. Medlicott) has not observed on them any glacial action about Tezpore, nor in any other parts of Assam.

III.—*The District of Lúdhíyá nah*, by T. W. H. TOLBORT, Esq., C. S.,—
communicated by MR. BLOCHMANN, (*Abstract*).

This paper on the District of Lúdhíyá nah is divided into two parts—1, on the Natural features; and 2, on the History of the District. The former part is chiefly botanical. The latter touches on the history of Máchíwárah, Tihárah, and the town of Lúdhíyá nah which before and during the times of the Moghuls, belonged to the *Sirkár of Sarhind*, or *Sahrind*. The sketch of the history of the district is continued to the present age.

Mr. Tolbort's paper is full of original information regarding the superstitions and the *guru* worship of the people; their reverence for the famous Shaikh 'Abdul Qádir of Gílán (a Persian province near the Caspian Sea), and for Sakkí Sarwar. The numerous biographies of Indian saints which we possess, say nothing of the latter; for the history of the former, the Asiatic Society of Bengal possesses several biographies in MS.

The author also gives a list of words and phrases illustrative of the Lúdhíyá nah dialect, and closes with a description of the ruins of Sarhind and Páyil.

(The paper is in type, and will form the concluding portion of No. 2 of the Philological Part of the Journal, which will be issued next week.)

Mr. Tolbort has also presented to the Society three Bactrian copper coins; twenty-two copper coins, chiefly of the reign of 'Aláuddín i Khiljí; a *Chahárgoshah Jalálah*, or square rupee of Akbar, struck in 990; and a most excellent silver coin of 'Aláuddín i Khiljí, struck in A. H. 710, or A. D. 1310. The latter has been described by Marsden (p. 530); but his reading seems somewhat doubtful. The part of the margin of Mr. Tolbort's specimen containing the name of the mint is almost entirely cut away; but it shews traces of the word *حضرة* *hazrat*, and was therefore struck at Dihlí. For Marsden's *هذه القضية* *házíhil-qazziyyatu*, I read *هذه الفضة* *házíhil fízzatu*, or *هذه الفضية* *házíhil-fízzíyyatu*, which means *this silver coin*. The word *qazziyyah* has no sense. My reading is confirmed by the fact that only silver coins of 'Aláuddín contain this phrase. Marsden's plates shew that 'Alaiddin's gold coins bear, with the exception of these two words, the same inscription as the silver coins.

Other silver coins of 'Aláuddín are, according to Marsden "from a mint of an unascertained city, the name of which seems to commence with the character سر, following the term بلدة." This may be بلدة سرهند *Baldah i Sarhind*.

IV.—*Note on the fall of a Meteorite at Jullunder, in April A. D. 1621, according to the Iqbálnámah i Jahángírí; by H. BLOCHMANN, Esq.*

"At this time (*Rab'ulákhir* 1030, or March—April 1621) a dreadful explosion was heard in a village near Jullunder (*Jálandhar*). The explosion proceeded from the east, and was so tremendous, that the inhabitants of the place were in the greatest anxiety for their lives. While the noise was going on, a lightning-like lustre shot along the heaven, and descended to the earth, when it disappeared. It took some time before the inhabitants recovered from their fright, and regained their composure. They sent a courier to Muhammad Sa'id, the Collector of Jullunder, and informed him of the event. The Collector at once mounted a horse, and came to the spot. He found that the ground to about ten to twelve yards square looked as if burned, and the soil was still quite hot. Muhammad Sa'id then ordered to dig up the burnt ground. The deeper they dug, the hotter and crisper the earth became, till they alighted on a hot lump of iron, which was so hot, that it seemed to have come that very moment out of the oven. When it got cooler, the Collector took it home, put it into a bag, sealed it up, and sent it to Court. His Majesty [*Jahángír*] called *Ustád Dáúd*, who was well known in those days for the excellent sword-blades which he made, and gave him the order to make the lump into a sword, a dagger and a knife. The armourer then reported that the iron would not stand under the hammer, but crumbled to pieces; but he could mix it with pure and faultless iron. This His Majesty ordered him to do. He then took three parts of meteoric iron (*áhan i barq*, lightning-iron) to one part of common iron, mixed them together, and made of it two swords, one dagger, and one knife, which he laid before His Majesty. After being mixed with the other iron, the meteoric iron exhibited the same grain as is observed in *Yamani* and Southern [Indian] swords. You could bend the swords, and not a trace of the bending would remain. When the

cutting power of these swords was compared with that of other swords, they stood at the very head of all swords."

The *Tuzuk i Jahángirí* (p. 329)—from which this account, as everything else, was copied by the author of the *Iqbálnámah*—states that the burned ground measured 10 to 12 *gaz*, not *cubits*, and that the weight of the meteorite was 160 *tolahs*. The two swords received the name of *Shamsher i qáti*' (cutting sword), and *Shamsher i barg-sirisht*, (lightning-natured sword.)

Regarding the time of the fall, the *Tuzuk i Jahángirí* says that it took place on the 30th *Farwardín* (Akbar's Era) in the morning. The *Iqbálnámah* and the *Tuzuk* state that the 1st *Farwardín* corresponded to *Monday* the 27th *Rabí' ulákhir* 1030, A. H.

Now the first *Muharram* (New Year's Day) 1030 fell, according to Prinsep's Tables, on Thursday the 16th November, 1620; and as the 27th *Rabí' ulákhir* is the 116th day of the year, it would correspond to *Sunday* the 11th March, 1621. But the *Tuzuk* clearly states that the 27th *Rabí' ulákhir* was a *Monday*—which difference arises from the fact that Muhammadans reckon the day from sunset to sunset, but not, as we do, from midnight to midnight.

Hence the 1st *Farwardín* (day-time) corresponds to *Monday* the 12th March, 1621; and the 30th *Farwardín*, the day when the meteorite fell, would be *Friday*, 10th April, 1621, *old style*.

The weight of the meteorite is mentioned to have been 160 *tolahs*. Akbar's *tolah* = 12 *Máshahs* [1 *Máshah* = 15·5 grains troy (Useful Tables, p. 111)], = 186 grains. Our *tolah* weighs 180 grains. Hence the meteorite would have weighed nearly 5·271 lbs. troy.

The President said that in the Catalogue of Meteorites and Fireballs, by R. P. Greg, Esq., given in the reports of the British Association for the Advancement of Science for 1860 (Oxford meeting) this fall is noticed under "1620, April 17, Jalindher, Lahore, 7 lbs. (?) weight: stated to be an Iron fall; 1621? fell with great light and noise." Notwithstanding the discrepancy in date this is obviously the same fall. It is particularly interesting as one of the very few falls of *Iron* which have been actually observed, and perhaps the only authentic fall of a meteoric iron in India. From the fact stated that the mass when worked by the blacksmith 'crumbled to pieces under the hammer;' it is probable that there was some admixture of stony matter with the iron.

The President also said he had received from Colonel Haughton, Commissioner of Cooch Behar, a notice of a brilliant meteor, which it was desirable to record.

Colonel Haughton says, (under date May 1st.) "We had a magnificent meteor last night (April 30th.) It must, when vertical, I think, have crossed between the tail of the Bear, and a bright star nearest to it. Its apparent size was about half moon's semi-diameter; course, at a guess, from the W. N. W. to E. S. E., colour less brilliant, and more greenish than the moon. Time about 7 p. m.

The most notable fact about it was, that during the last portion of its course, there was a ragged edge of flame—like the corona during the eclipse, I should think—from the side opposite to its course."

*V.—Analysis of the Khetree Meteorite, with an account of its fall ;
by D. WALDIE, Esq., (Abstract).*

The Meteoric stone of which I have made the analysis was sent to me a considerable time ago by Mr. W. Stotesbury, of the Topographical Survey. Other urgent occupations have prevented me from completing it until now. Mr. Stotesbury gives an interesting account of the fall, though he is somewhat uncertain of the date: he says, February 1867, not far from Khetree in Shekawattee, Rajputana, and he himself heard the explosion accompanying the fall, though he did not see the stones come to the earth. The stone, submitted to me, was similar in appearance to many of the samples in the Indian and Geological Survey's Museum, a grey mass studded with small metallic globules, partly of a light bluish grey colour, partly of a darker grey, and with a nearly black crust.

The following is an abstract of the analysis—

Nickel iron containing Cobalt and Chromium,	16.98
Troilite (Sulphide of iron) with a little Schreibersite (Phosphide of iron),	5.44
Earthy matter soluble in acids, chiefly Silicate of Magnesia and Iron,	34.69
Chrome Iron, .....	.53
Silicates insoluble in acids, chiefly Silicate of Magnesia,	42.36

An attempt was made to separate the light-coloured part from the dark grey, and a portion of the light-coloured thus obtained free from dark,—also a portion of the dark-coloured but mixed with some of the light-coloured. The light-coloured part had the highest specific gravity, and contained most metallic iron. It also contained all, or almost all, the cobalt along with nickel, while the dark part contained only, or almost only, nickel. The insoluble part of the dark-coloured portion contained about two-thirds of the chrome iron, the light-coloured about one-third. In other respects they were nearly alike, both containing about the same proportion of Sulphur and other constituents. Particulars will be given in the Journal.

VI.—*On the Ancient Copper Miners of Singhbhúm ;*
by V. BALL, ESQ., B. A., *Geological Survey of India.*

The existence of copper ores and ancient copper mines in the district of Singhbhúm was first prominently brought to notice by Colonel Haughton, who published an account of the mineral resources of Singhbhúm in the Journal of this Society for the year 1854. The result of this communication was, that some Calcutta merchants deputed Dr. Emil Stöhr to examine the ground, and a Company was formed in 1857 to work the ore. It is no part of the design of the present paper to discuss, or further allude to, the brief and unfortunate history of this Company, or of that which, raised on its ruins, met with a similar fate.

During the past season I have been engaged in an examination of the portion of country in which the copper-ores occur. Commencing to examine the copper-bearing rocks at the foot of the Chota-Nagpore plateau and proceeding thence eastwards, I found that at nearly every point where traces of ore occurred there are ancient excavations. These increasing in size, and being found in every conceivable situation, at the tops of hills, in valleys, in the thickest jungles, and even in the middle of cultivation where the rocks are obscured by superficial deposits. My curiosity was aroused as to who the ancient miners could have been, who have left such imperishable evidence of their skill.

Before proceeding to detail the enquiries which I set on foot, and the conclusions arrived at, it will be necessary to allude to what, so far

as I have been able to ascertain, are the only published opinions on the subject.

Colonel Haughton states "There was no local tradition as to when, or by whom the diggings had been worked, and it was a matter of doubt whether they were really made for copper."

Dr. Stöhr, since his return to Europe, has published two papers, one in Zürich* and the other in the Jahrbuch for 1854. In the former he suggests a connection between these relics of ancient civilization, and the rock temples of Orissa and the ruins of the town of Dulmi; he also repeats the only tradition known to the natives. This, as it was also told to me, I shall again refer to. In the latter paper, he conjectures that the mines are of the 11th century, when the kingdom of Orissa flourished.

In Singhbhúm proper, the replies to my queries were of a negative kind. No one could make the least suggestion as to who the miners were; and with regard to the age of the mines, the answers were, that they had not been worked during the past three, four or five generations.

From the local Rájahs, called respectively the *Koer* of Seraikela and the *Thakúr* of Khursawa, though they seemed willing to communicate all that they knew, I received similar replies.

In Dhalbhúm the *Purdhán* of Landú having been asked his opinion as to the ancient workers, replied that he did not know, but added "The Seraks formerly possessed the country." This belief of the Seraks having once occupied the country is recorded by both Major Tickell and Col. Dalton, as I shall have to allude to again further on.

Having thus had the name of the Seraks suggested, I was enabled to give a definite form to my queries. The result being that not only were several tanks pointed out as the work of Seraks, but, as I proceeded further eastwards, the mines were all attributed to the same ancient people.

East of the Kapergaddee ghát, on the Midnapore and Chaibassa road, there is the site of an old town called Ruam. From the *ghátwal* of Ichinda, and independently from the zemindar of Pairaguri, I heard the only tradition known in connection with this place. It is, that a Rájah named Ruam who lived there possessed two tongues

* Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich, Vol V. p. 329.

(*do jib*). This is the story which Dr. Stöhr also heard, and to him must be accorded whatever credit is due to priority of publication. Dr. Stöhr's interpretation is, that he must have spoken two languages, and was therefore a foreigner. Col. Dalton to whom I communicated the story, has very kindly given its explanation as follows: "The legend of the two tongues shews that the potentate, to which it alludes, must have been a Nag, or one of the serpent race; there can, I think, be little doubt that by the serpent race, the Kols are really meant, and as the great bulk of the population of Dhalbhúm are Bhumiz, ergo Kols, it is not unusual to find the legend of two-tongued Rájahs among them."

Hence this place has probably been inhabited by Kol Rájahs since the time of the Seraks; but whether the copper was worked by the former, the latter, or by both, the remains at present to be seen do not decide. They consist of a ridge or moat of clay which it is said enclosed the *gurh*, but which now encloses and is itself enclosed by a jungle of remarkably fine trees with dense undergrowth. Close by are three old Serak tanks, and a great accumulation of copper-slag indicating that this must have been one of the centres of operations. Following the direction of the strike of the rocks which, from this point, trends to S. W. and S., old workings and slag heaps can be traced for many miles further; the last being about 3 miles north of Kumerára, on the Midnapore and Bombay road.

All along this line wherever the people were sufficiently intelligent to reply to the enquiries, the mines were invariably attributed to the Seraks. At Ghâtsillah, where the Dhalbhúm Rájah (a minor) lives, I received the same information. Here I also heard of some remains at Karra-Mounda, six miles east of Kumerára. These I afterwards examined, on entering the village the eye is at once attracted by a number of rings of vitrified clay which are thickly scattered over the surface, throughout an area exceeding in extent that covered by the houses; on removing the surrounding clay and rubbish, I found that these rings were the sections of small furnaces which had become covered up.

The most plausible conjecture was, that this place was a depôt in which the rudely smelted copper, brought from the hills, was refined and prepared for market. Several tanks in this neighbourhood are said

to have been the work of Seraks. Here for the first time did I hear mention made of any definite age. Several respectable villagers assigned to the furnaces a minimum age of 700 years, but admitted that they might be much older.

In the jungle east of the village of Khúrsi, I was pointed out a ridge of clay which was said to be the bund of an ancient tank, with which assertion I was obliged to be satisfied, as the thickness of the jungle prevented more than a few feet of it being seen at a time; close by there were two or three slabs of cut laterite without ornament of any kind, these are attributed to the Seraks and are regarded with a certain amount of awe, but no reverence.

At Panrasoli there is a tank with a chatah in the centre; this I did not visit. At Bend there is what looks like the capital of a pillar with cogged ornamentation, this is also of laterite and is said to have been brought from Panrasoli and to belong to the Serak period.

It is due to the ancient miners to give them credit for considerable mining skill; and the slags furnish conclusive evidence of their proficiency as practical metallurgists.

They seem to have searched the country with wonderful care; even at remote points in Manbhúm, the only ones at which copper has been found, there are ancient excavations.

In a paper on Arabia Petræa, recently published, it is suggested that the ancient copper mines therein described, were in all probability worked with stone implements; such a supposition cannot for a moment be entertained in reference to the excavations of Singhbhúm as they at present stand; but whether the very earliest outcrop excavations may not have been effected with instruments of stone, it is impossible to decide.

Although it is evident that these ancients worked the ore with profit, it does not by any means follow that it would pay an English Company to work them now. Not only could the ancients work economically, whereas every European administration involves a primary heavy expenditure, but in those early times, long before the metals arrived at their present relative values, copper may have been regarded as a precious metal.

These remarks are made in anticipation of any question which may be asked on the subject, but it is apart from the scope of this

communication to discuss the prospects of success which mining might have at the present day.

In this country where there are no reliable records, even such evidence as has been given in support of the Seraks having been the ancient copper miners is not usually obtainable. In Singhbhúm there are in operation at the present day extensive potstone mines, and gold-washing is carried on by certain of the lower races. The unknown discoverers of these productions must be relegated to that class of mythical individuals who, in all countries, have pointed out the specific virtues of many drugs, and the particular properties of many natural productions.

All the published ethnological papers having reference to Singhbhúm or the adjoining districts refer to the prevalence of a belief amongst the Hos and Bhumiz that their country was formerly in possession of the Seraks.

Major Tickell says "Singhbbhúm passed into the hands of the Surawaks, a race of Bengali Brahmins (?) now almost extinct but then numerous and opulent, whose original country is said to have been Sikrbhúm and Pachete * * * the oppressions of the Surawaks ended in their total expulsion from the Kolehan."

Col. Dalton has described several Jain temples and Buddhist emblems in subsequently Hinduized temples which are found in Manbhúm. He considers it "probable that these shrines mark the course taken in his travels by the great saint Vira." It may be that Vira did not visit Singhbhúm, hence the absence of temples. Or, on the other hand the Yatis, or clerical Jains, may not have extended beyond the ranges of hills which bound Manbhúm on the south, the more adventurous Seraks, or lay Jains, having alone penetrated the jungles where they were rewarded with the discovery of copper, upon the working of which they must have spent all their time and energy, as with the exception of the tanks above mentioned, the mines furnish the sole evidence of their occupation of that part of the country. It is scarcely conceivable that the Hos, when they drove out the Seraks, could have utterly destroyed all trace of buildings. Col. Dalton* estimates that the Jains were driven out by the Hos more than 2,000 years ago.

Without the least desire to stretch or force an analogy, one cannot

* J. A. S. B. Vol. XXXV. Part II. p. 164.

but be struck by the fact that the history of the earliest Aryan colonies in several other countries is connected with mines and mining, or to quote the words of the author of the *Annals of Rural Bengal*. "A distant colony of the same race (Aryans) excavated silver ore in pre-historic Spain; and the earliest glimpses we get at our own England, disclose an Aryan settlement, fishing in its willow canoes and working in the mines of Cornwall."*

Within the last few weeks a paper† by Mr. Bauerman, on *Arabia Petrea*, has reached India; in it some ancient copper mines and furnaces are described, many of the remarks upon which, might, without the least modification be equally aptly applied to those of Singhbhúm. Mr. Bauerman writes—"There are no inscriptions or any other guide to the probable date of these workings; but it is evident from the extraordinarily poor character of the ore, that they must belong to a very early period, when metals were of nearly uniform value, owing to the production being confined to a few localities. Judging by the present conditions of mining economy, it may be fairly said that no such deposit could possibly be worked now, unless the value of copper was to be raised to several times that of gold * * * so perfectly has nearly every visible spot of ore been removed, that we were for some time in doubt as to whether the outer hollow was really an old mine and not a natural cavern."

The above notes have been put together as a contribution to the little known history of one of the Aryan races. It is hoped that the subject may have some interest for those who are at present engaged in researches regarding the early history of this country; it will be for them to decide what value is to be attached to the opinions put forward in this paper.

The reading of the two next papers :—

VII. *Observations on the Temples of Razdan in the Lar Pergunna, Cashmir*, by Lieut.-Col. D. J. F. NEWALL, R. A.

VIII. *India as described by Dionysius, the geographer, in his voyage round the world in Vers. 1107—1165*, by A. L. CLAY, Esq., C. S., was postponed.

After the announcement of the newly elected members, the meeting separated.

* *Annals of Rural Bengal*, p. 91.

† *Quarterly Journal of the Geological Society*, Vol. XXV. Part I. p. 17.

LIBRARY.

THE following additions were made to the Library since the last Meeting.:

Presentations.

. Names of Donors in Capitals.

Traité E'lémentaire des Fonctions Elliptiques, par Dr. O. J. Broch, 2nd Fasc. - THE AUTHOR.

Ueber den Charakter der Pehlewi-sprache, mit besonderer Rücksicht auf die Inschriften; im Auszuge mitgetheilt, von Dr. M. Haug.—THE AUTHOR.

Mémoires pour servir à la connaissance des Crinoïdes vivants, par M. Sars.—THE AUTHOR.

Our Valleys in the North-west Himalayas, by A. M. Cameron.—THE AUTHOR.

Rámáyanam Vol. I., Nos. 2, 3, 4, and 5; edited by Hemachandra Bhattáchárya.—THE EDITOR.

Bulletin de la Société de Géographie, Février, 1869.—THE GEOGRAPHICAL SOCIETY OF PARIS.

The Anthropological Review, No. 25.—THE ANTHROPOLOGICAL SOCIETY.

The Journal of the Chemical Society, January, February and March, 1869.—THE SOCIETY.

Journal Asiatique, No. 46.—THE ASIATIC SOCIETY OF PARIS.

Journal of the Agricultural and Horticultural Society of India, N. S., Vol. I., Part III.—THE SOCIETY.

Abhandlungen für die Kunde des Morgenlandes, Band V., No. 2.—THE SOCIETY.

Zeitschrift der Deutschen Morgenländischen Gesellschaft, Band XXII., Heft, IV.—THE SOCIETY.

Nyt Magazin for Naturvidenskaberne, Bind XV.—THE SOCIETY.

Forhandlinger-i-Videnskabs—Selskabet, Christiania, 1867.—THE CHRISTIANIA UNIVERSITY.

Tre Akademiske Taler paa Universitetets Aarsfest den 2den Setemler, af M. F. Monrad.—THE SAME.

Notice Statistique sur le Royaume de Norvège.—THE SAME.

Les Pêches de la Norwége, par H. Baars.—THE SAME.

Norges Officielle Statistik Udgiven i Aaret, 1862, No. 2 C; Aaret, 1866, No. 3 C; Aaret, 1867, No. 1 D, No. 1 13, No. 3 C; Aaret, No. 1 C, D, F, No. 2 F, No. 8 C.—THE SAME.

Norsk Meteorologisk Aarbog for 1867.—THE SAME.

Meteorologiske Iagttagelser-i-det Sydlige Norge, 1863-64, 65-66.—THE SAME.

Meteorologiske Iagttagelser paa fur Telegraf-stationer ved Norges Keyst reducerede og sammenstillede of J. J. Astrand.—THE SAME.

Meteorologiske Iagttagelser paa Christiania Observatorium, 1866-67.—THE SAME.

Histoire Naturelle des Crustacés d'eau Douce de Norwége, par G. O. Sars, 1re Liv.—THE SAME.

British Burmah, Revenue Reports for 1867-68.—THE GOVERNMENT OF BENGAL.

Selections from the Records of the Government of India, Home Department, Nos. 67, 69, and 70.—THE SAME.

Report of the Popular Education in the Punjab and its Dependencies, for 1867-68.—THE SAME.

Report on the Administration of the License Tax for 1867-68.—THE SAME.

Records of the Geological Survey of India, Vol. II., Part I.—THE SAME.

Palæontología Indica, Ser. V., No. 6 and 7.—THE SAME.

Records of the Geological Survey of India, Vol. II., Part I.—THE SUPERINTENDENT, GEOLOGICAL SURVEY OF INDIA.

A Lecture on Persian Poetry and on Romantic Poets of Persia, by A. C. Cameron.—THE AUTHOR.

Purchase.

Traité de l' E'ducation des Vers a soie au Japon, traduit du Japonais, par L. de Rosny.

Commentar über das Avesta von F. Spiegel, 2 ter Band.

Grammaire de la Langue Zende.

Ibn-el-Athiri, Vol. III.

Simpson's India Ancient and Modern, Part III.

Transactions of the Zoological Society, Vol. VI., part 4.

Comptes Rendus Nos. 7 and 8.

The Numismatic Chronicle, 1868, Part IV.

Revue de Zoologie 1869, No. 1.

Revue des Deux Mondes, Mars 1st, 1869.

The Annals and Magazine of Natural History, March 1869.

Exchange.

The Athenæum for February 1869.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR JULY, 1869.

The monthly General Meeting was held on Wednesday the 7th Instant at 9 o'clock p. m.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

Presentations were announced—

1. From H. A. Caggard, Esq., remnants of a human skeleton found while excavating for a drain in Kyd Street.—The completely ossified fragments of the skull shew a great thickness, the other parts of the extremities &c. are normal.

2. From Bábu Gopináth Sen—Facsimile of the indications of the Anemometer, as noted during the storm of the 16th May, 1869.

3. From Dr. C. Macnamara, a copy of a Manual of the diseases of the eye.

4. From Bábu Bholanáth Chandra, a copy of the Travels of a Hindú to various parts of Bengal and Upper India, Vols. I and II.

Upon the proposition of the President, a vote of thanks was passed to the donors.

The following gentlemen duly proposed and seconded at the last meeting were balloted for, and elected ordinary members—

Lieut. J. C. Ross, R. E.

A. V. Nursing Rao, Esq.

C. J. Lyall, Esq., C. S.

Robert Gordon, Esq., C. E.

S. Pell, Esq.

A. M. Markham, Esq., C. S.

J. Coates, Esq., M. D.

The following gentlemen are candidates for ballot at the next meeting—

W. Selbach, Esq., proposed by Dr. Stoliczka, seconded by Mr. H. Blochmann.

Prince Jahán Qadr Mirzá Muhammad Wáhid 'Alí Bahádur, nephew of His Majesty the King of Oudh, proposed by Maulvi 'Abdullatíf Khán Bahádur, seconded by Mr. H. Blochmann.

The following gentlemen have intimated their desire to withdraw from the Society :

A. Mackenzie, Esq.

E. B. Harris, Esq.

G. W. Cline, Esq., M. D.

Dr. E. Bonavia.

Rev. J. Barton.

Bábu Bholanáth Chandra.

Several of these gentlemen intimated some time ago their desire of withdrawal, but according to the present rules of the Society their wishes could not have been earlier notified.

The following papers were read :—

I.—*Notes on the Temples of Razdan in the Lar Pergunnah, Cashmir ;*
by LIEUT.-COL. D. J. F. NEWALL, (*Abstract.*)

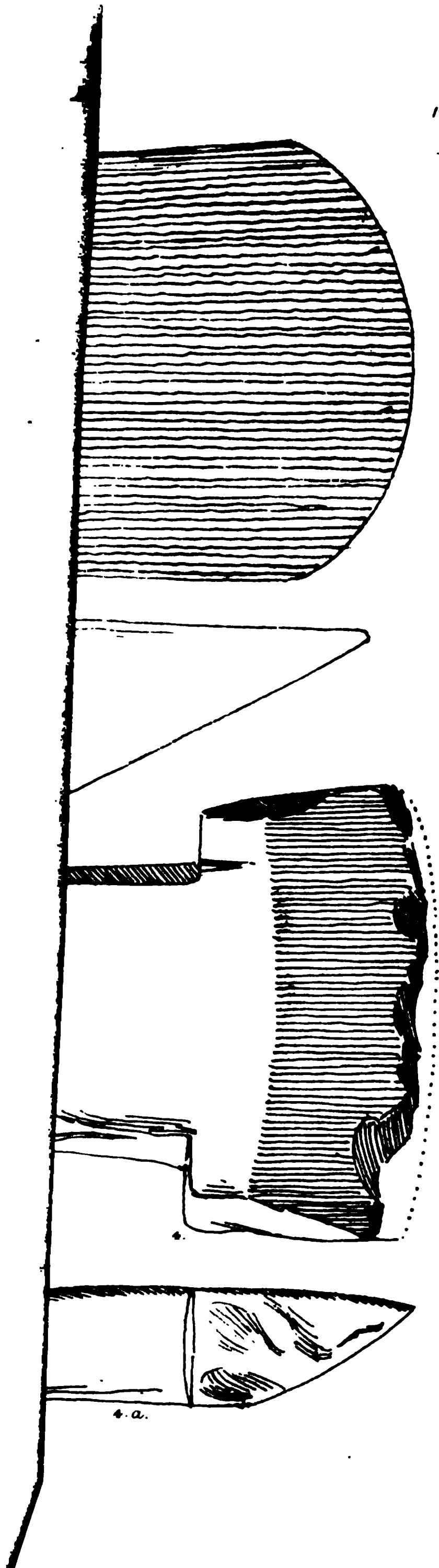
This paper is a continuation of an article by the same author on Pilgrimages in Cashmir, which was printed in the Journal of the Society for 1866.

Col. Newall describes in it the ruins of several temples in the Lar Valley in Cashmir. A peculiar interest attaches to them, because they have not been described by General Cunningham.

The paper itself is accompanied by three sketches drawn by Col. Newall himself. These sketches are now in the hands of the artist, and will be given in Part I. No. 3 of our Journal together with the paper itself.

II.—*India as described by Dionysius the Geographer in his Voyage round the world, verses 1107 to 1165 ;* by A. L. CLAY, Esq., C. S.—*communicated* by COL. J. C. HAUGHTON, (*Abstract.*)

Mr. Clay has given in this paper the contents of a passage in Dionysius Periegetes of Constantinople, which treats of India. This ancient



triumphs over the Indi. In the valleys of the wind-swept Caucasus, says the poet, rises the mighty Indus and flows south into the Erythræan sea; separating the fertile land of India from the barren country of the Arian tribes of Oritæ, Aribes, and linen-wearing Arachotes, who dwell at the foot of the mountain range of Paropamisus (a third division of the so-called range of Caucasus or Taurus,) and from the Gēdroši, who live on the coast of the Erythræan sea. By the mouths of the river is formed the Delta of Patalene.*

Dionysius† then relates how this remarkable country is inhabited by a variety of distinct tribes in various stages of prosperity, and begins his list with the Dardanees‡ whom he places on the left bank of the Indus, their eastern limit being the river Hydaspes, where it receives the tributary river Acesines. Between those three rivers and the Kophes live the tribes of Sabæ,§ Toxili,|| Scodri,¶ and Pencalli* (a wild and savage race of men). Last of all in the region of the auriferous and mighty rivers Hypanis† and Megarsus‡ live the Gargaridæ,§ followers of the god Bacchus.|| The two last rivers are represented as rising in Mount Emodes and running southwards to the promontory of Kolis after watering the valley of the Ganges.

The description of India concludes with mention of a tract of fertile

* The harbour of Patala is mentioned by Pliny, Curtius, Strabo, and Arrian.

† Dionysius mentions the rivers in India in the following order: 1. Indus; 2. Hydaspes; 3. Acesines; 4. Kophes; 5. Hypanis; 6. Megarsus. All geographers agree in placing the tributaries of the Indus, beginning from the West, (1) Choaspes; (2) Kophes; (3) Indus; (4) Hydaspes; (5) Acesines; (6) Hyarotis or Hydraotis; (7) Hypanis or Hypasis. One geographer, Ptolemaeus, calls these rivers (1) Choas; (2) Suastus; (3) Indus; (4) Bidaspes; (5) Sandabilis; (6) Adris; (7) Bipasis; (8) Zadadrus. Accordingly Dionysius appears to err in placing the Kophes in India.

‡ Called by others Dardæ, Daradræ, (Plin. Ptol.)

§ Called Sibæ by others. (Arrian: Strab. Erat.)

|| Should be Taxili, a people mentioned by Curtius, Ptol., and Str., as living between the Indus and Hydaspes, having a town Taxilus, so-called from a king of that name.

¶ Scodri, not known to geographers: Diodorus mentions Sodri, living near the Indus.

* A city Pencalaitis is placed by Pliny, Strabo, and others, between the Kophes and the Indus.

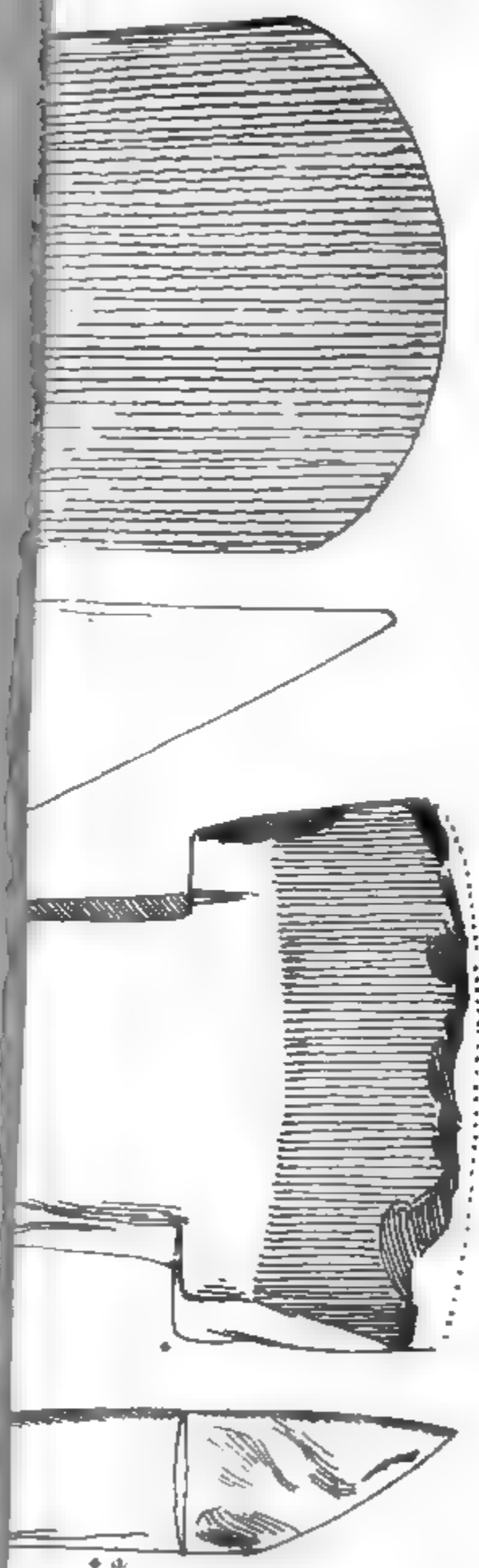
† Represented by other geographers (Pliny, &c.) as running into the Indus. Alexander is said to have reached this river.

‡ Not mentioned by other writers, probably the Zadadrus of Ptolemy.

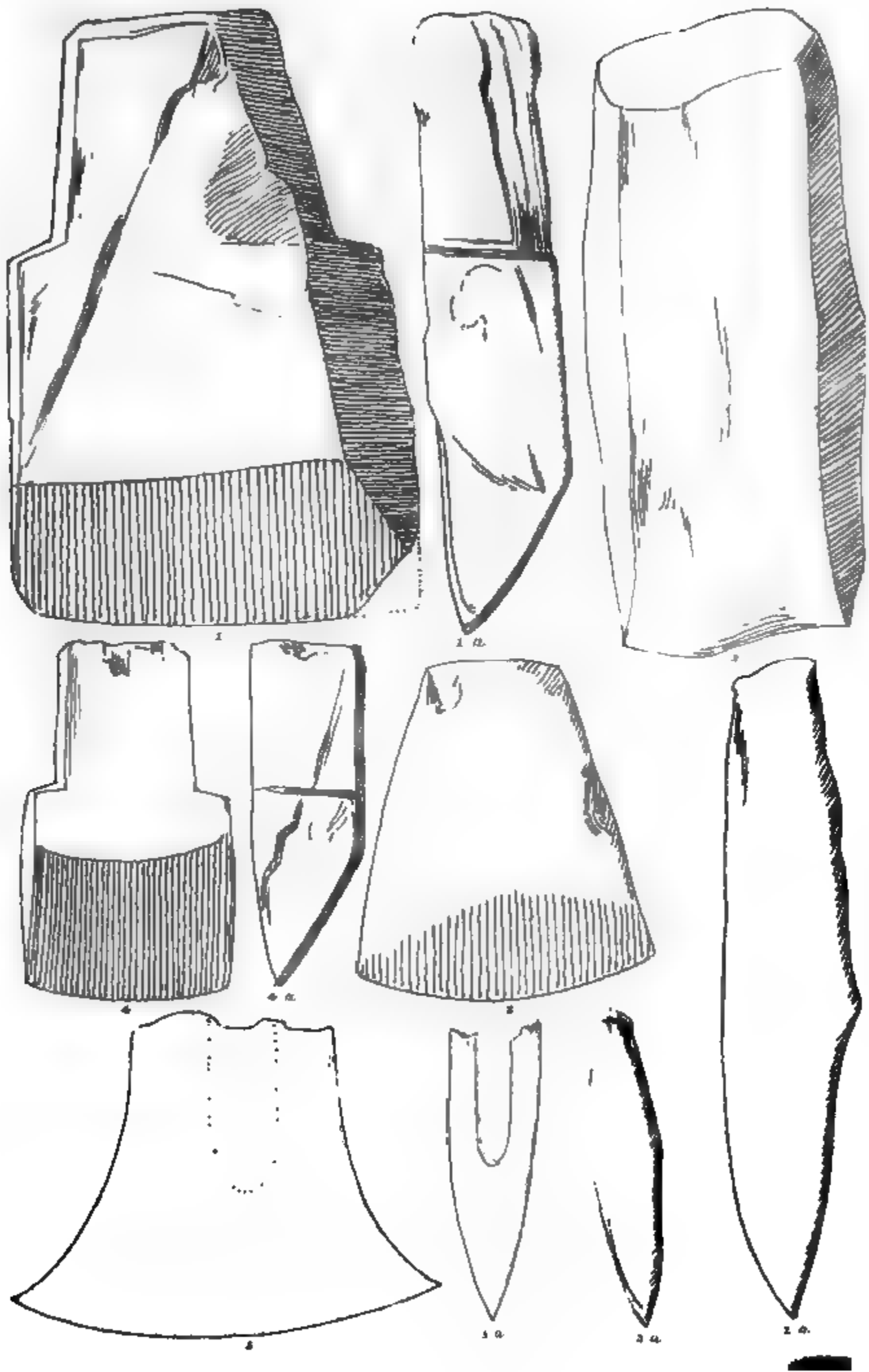
§ This name is not found in other writers. Pandaridæ and Gargaridæ are suggested: the latter are mentioned by Strabo, Arrian, Plutarch, and Diodorus; the two last place them near the Ganges.

|| Dionysius says (577), "These people don't shout half as loud as certain people in the islands of the British Channel who also worship the same god."

PL III









land along the Ganges, sanctified by the passage of Bacchus, who is said to have smitten that country for a neglect of his rites, and to have left behind a tract called the path of Nyssa.

Regarding the name *Nyssa*, Mr. Clay has the following remark:—

“ The plain of Nyssa, watered by the Ganges is mentioned in another place (v. 625) : from which it seems probable that the geographer understood that a place of that name existed somewhere near that river. Nyssa is universally known as the birthplace of Bacchus, but by some placed in Arabia ; by others (Arrian and Curtius, &c.) in India, but at the foot of Mount Paropamisus. The whole matter is also supposed to be merely allegorical, as representing the sun rising in the East, and traversing the land of India : the pillars put up by the god on Mount Emodes being the starting point in his course, and those at Gades and the African coast the final goal.

It appears to me, at any rate, that the name Nyssa has left its mark in the word which signifies a state of drunkenness in the language of Hindustan.”—

The coincidence in sound of the name *Nyssa*, the birthplace of Bacchus, with the Hindústání *nissah*, drunkenness, is, at the first sight, striking. But this coincidence is purely accidental ; for the Hindústání *nissah* is the vulgar pronunciation of the Persian *nishshah* نشه, which is a corruption (*taḡarruf*) of the Arab. نَشَأُ *nish-ah*, with the *iazm* above the *shín*. Hence the Hindústání *nissah* is a recent Muhammadan importation.

III.—*Notes on the Stone Implements of Burma ;*

by W. THEOBALD, Junior, Esq., Geological Survey of India.

The occurrence of stone implements in India, both of the palæolithic and neolithic type, is a fact which has now been made known some years, and each year seems to add something towards a more extended acquaintance with these interesting relics. But, excepting a short notice in the Proceedings for July, 1865, (p. 126)* nothing that I am aware of, has been published respecting the stone implements found in Burma. They are, however, curious, as differing materially in form and type, not only from anything found in India, but from anything

* To complete here my account, I shall be obliged to repeat a few of my former statements.

hitherto described from any part of Europe, though any implement yet found in India, has its precise analogue in Europe.

The material of which the Burmese implements are fashioned, is either basalt, or some schistose rock, quite unlike anything to be met with in the district where the implements themselves occur; a fact, pointing, in my opinion, to their having been brought down from upper Burma, (where these implements are said to be common) by the original settlers in the country. They are called "*mo-gio*," or thunder-bolt, by the Burmese, and are believed to accompany the lightning. The popular idea is that, if a flash of lightning is seen to strike and an earthen *chattie*, or other vessel, is inverted over the spot, that in the course of a year, or so, the *mo-gio* will be found in it, having worked its way back again to the surface by its own recoil. To the true "*mo-gio*," the Burmese attach much value from the properties they believe it to possess, but they subject the article to many tests, as, no doubt from experience, they have discovered that many of them are in circulation, which from *not possessing* the characteristic powers of the *mo-gio* must therefore be spurious. I have not, however, myself seen more than one stone *mo-gio*, whose authenticity I doubted, and that mainly from its being made of jade; but though rare down here, authentic jade implements may be found in upper Burma. The implement was somewhat of the type, represented in fig. 3, pl. IV, and I was asked Rs. 50 for it.

One test of authenticity, the Burmese say, is that, if wrapped in a cloth and fired at, no effect will be produced on either the cloth, or its contents, however, near the piece may be fired at, and the true *mo-gio* is mainly valued from this belief in its presence producing invulnerability in the wearer. Another test is, placing the *mo-gio* on a mat with a quantity of rice. If a genuine stone from heaven, no fowls, or other creatures, will venture near the rice. Again another test is cutting a rainbow in half; a feat quite within the power of any one possessing the real *mo-gio*. Or if he cuts down a plantain tree with one, the tree will be killed and not, as is usually the case when cut down, send up a new shoot. It also guards from fire, which leaves untouched any house containing one. Its medicinal virtues too are believed to be very great, and a small chip reduced to powder and administered internally is considered as a cure against inflammation of the viscera and of the liver.

All the specimens of stone implements figured except fig. 2, pl. IV, which was from near Moulmein, were procured by me in the Prome district, east of the Irawadi; near the frontier and below Prome they become scarce, increasing in abundance,—to credit native testimony—above the frontier.

The universal testimony of the Burmese goes to prove that these implements are picked up on the surface of the hills, in the fields or clearings made for cultivation, and I never heard of their being found in the plains or anywhere, save on the hill sides, by the peasants engaged in clearing and cultivating them. This I think points to their accidental loss or abandonment by their original owners, in spots which supplied the wants of a long passed generation, as they do the present race. Supposing, however, that the men who wrought these implements were ignorant of metal, or I may say iron, it is not easy to comprehend, how they were able to effect clearances, as the present race does, in the gigantic forests of Pegu; assuredly heavier and more difficult to cope with by feeble men then, than now, and without clearing the forest, no cultivation would be possible in its umbrageous recesses.

On the question then, whether the makers of these stone implements possessed iron also, depends, I think, the right determination of their use. If in possession of the means for clearing the hill sides sufficiently for the cultivation of cereals, then I should incline to regard these stone relics as agricultural implements, used in hand agriculture, at the end of a stick, as a spade, to form the shallow holes in which the "hill rice" is even now sown by the Karens and Burmese in their hill clearings. If not explained in this manner, we must then regard them as weapons of the chase and war, though this use is, I think, negatived by their thoroughly inefficient character for such purposes.

Doubtless we shall be in a better position to argue their uses when a larger collection has been made, and any present remarks are, therefore, only tentative and designed to elicit additional information.

The most remarkable specimens, which seem to belong almost to another class of weapons from the rest, are those represented in figs. 1 and 2 of pl. III.

Fig. 1 (pl. III) is now in London, where I took it for comparison, and a very similar implement not quite so massive, but of the identical type, is in the "Christy" Museum, marked "Sumatra;" and this is the only

other specimen, I could find in England, approaching it in character. It is of basalt, worked perfectly smooth, with here and there, the evidence of its chipped, or primitive stage unobliterated by grinding. Its cutting edge, however, is perfectly worked down and entire, save a little scraping it has been subjected to by the natives before it came into my possession for medicinal purposes, which is sufficient to display the surface change of colour in the stone from atmospheric action.

Fig. 2 (pl. III) is a remarkable form, highly finished, but seems to have suffered fracture across the neck, which may have been an inch or two longer. I judge this was the case, as whilst the sides are squared and polished, the top surface is an unground fracture. This is of much the same material as the last, a fine grained basalt, and may be considered I think as a "chisel," and not a field implement. It is the only one of the type I ever saw in Pegu, and was said to have been found in the Prome district.

The specimens figured on pl. III, fig. 4 and pl. IV, fig. 1, are of the commonest type and somewhat variable as to shape and size. In the British Museum, there is one of this type, presented by Capt. Duff from West of the Iravadi. Many of these implements have seen bad usage, though many of the chips are of recent origin, and made by the Burmese owners for medical use.

If used as offensive weapons, we must suppose them to have been set in a handle parallel to the cutting edge. I, however, rather incline to think that they were used as implements for digging, and were fixed vertically in a handle at right angles to the edge, but in the same plane as back to front. The shoulders which are so conspicuous a feature on all specimens of this type would, on the latter supposition be of service, but not on the former. Or they may have been fixed hoe-wise with the handle at right angles to the back and front plane. Thus fixed, the shoulders would have been useful, but from their lightness, I incline to the idea of their having been fixed *vertically* in a handle and used for digging holes, for which their shape of edge is well adapted.

Fig. 4, on plate IV, belongs to a type which, though not so common as the last, is not rare, and the two pass into each other by intermediate forms.

Fig. 3, on pl. IV, represents a type not very common, and not unlike some of the implements found in Behar, though the nearest to it that I have seen, have already been pointed out above.

Fig. 3, on pl. III, belongs to a curious type of which I have only seen one specimen, and it seems probable from the variety of pattern displayed in these implements, that each type was fashioned for some special purpose.

All the above specimens have once been finely ground and finished, though from the nature of the material employed and subsequent exposure and use, some are fresher as well as more perfect than others. The specimen has been recently broken by its discoverer, in picking it up in a field, when at work.

Other specimens of not an uncommon type, and which vary in size, also occur. The form resembles that represented in fig. 4, pl. III, but they are not so regular; one is much flatter and on the edges rather injured. Another specimen consists of some schistose rock, split and roughly ground down, and the working of the lashings, used to fasten the handle, often leave traces on the side, which in the present specimen are clearly seen. From its shape I think this type was probably impacted hatchet-wise in its handle and used for cutting, and that specimen has evidently seen hard usage.

Fig. 2, pl. IV, represents a rough, stout, wedge-shaped implement, of which I have never seen another, and belonged to a man near Moulmein who declined to part with it.

The above are all the types of stone implements I have noticed in Pegu, though their form is very variable, much more so than the Indian "celts." The great bulk, however, of those noticed by me belong to some variety of the types represented in fig. 4 on pl. III, and figs. 3 and 4 on pl. IV, the entire number of all types which I have observed in Pegu amounting to 50, or thereabouts.

I may mention, that I picked up somewhere near Jabalpúr, a roughly shaped stone spindle whorl,* or weight of soapstone, the shape of an India-rubber-ring, the margins being broader and thicker. At the time I had no suspicion of its interest. Since then, however, I have seen precisely similar articles in European collections, and have no doubt, what I threw away was an authentic antique spindle weight, as I think they are considered.

* It resembles in form the specimen figured on pl. 1 of the Proceedings for 1866 (vide July number, p. 136), but was considerably smaller.

I have also at this opportunity sketched, pl. IV, fig. 5, a fragment of a Brass Celt which was shown to me near Moulmein, and was regarded by me as of doubtful authenticity.

A short discussion followed the reading of this paper.

Dr. Stoliczka said that one or two of the forms of implements with uniformly attenuated sides (fig. 3, pl. IV,) appear to have their perfect analoga in the later stone age of Europe, where polished stone implements came in use, instead of the older rude ones. The nature of the rock, being basalt or schist, certainly did not allow their being used in clearances or the like purposes in the jungle, and Mr. Theobald's suggestion that they were more likely employed in rice cultivation is no doubt much more probable.

The President drew attention to the very peculiar form of these implements, being evidently manufactured for certain purposes. Their most remarkable appearance, quite distinct from European forms of the kind, consists in the sharpened edge on one side only which most of them possess. This, he believed, has not been noticed in any of the implements found in Europe.

IV.—*Notes on Indian Mollusca.* Descriptions of new species of *Diplommata* from the Khasi hills; by Captain H. H. Godwin-Austen, F. R. G. S.—communicated by Dr. Stoliczka.

Captain Godwin-Austen has for years given attention to collecting landshells in various parts of India, and to carefully observing their animals. He has contributed several interesting novelties to Mr. W. T. Blanford's well-known "Contributions to Indian Malacology." Late-ly, however, Captain Godwin-Austen obtained a large number of new species in the Khasi hills, and this has induced him to open with the present contribution a series of papers "on Indian Mollusca." Four new species and a very interesting variety of *D. polypleuris* have now been described by the author. The notes regarding the animals of these species are especially interesting, because we as yet know very little of the animals of the CYCLOSTOMACEÆ, and allied forms.

V.—*Contributions to Indian Malacology, No. XI.* Descriptions of new species of *Paludomus*, *Cremnoconchus*, *Cyclostoma*, and of *Helicidæ* from various parts of India; by W. T. BLANFORD, Esq., A. R. S. M., F. G. S., &c.

Dr. Stoliczka laid on the table the beautifully executed drawings accompanying the paper. Among the 18 new species noticed, several belong to *Nanina* and *Glessula* (*Achatina*), the latter chiefly are from Western and Southern India, the former as well, as some of the other shells, are from the Khasi and Cachar hills. The paper also contains notes on several little or imperfectly known species with regard to shells, as well as to their animals.

In answer to a question put by the Rev. J. Long, whether he had examined all the Mollusca occurring in lower Bengal, Dr. Stoliczka stated that he had seen a great many of them, but it would not be possible to give for some time a satisfactory account of all those he had examined. The anatomical details require a large number of illustrations, in order to be perfectly intelligible, and the same may be said regarding the animals themselves. This involves a great expense, and it will be chiefly on this account that the work can only be published at intervals; it is, however, in progress.

Dr. St. also remarked that there are probably few places in the world which offer so many remarkable Mollusca for examination, as the Sundarbans. He alluded to the great variations which some organs appear to undergo by changes affecting the habit of the animals. In one common species of the CERITHIIDÆ, most of which are marine animals and therefore possess gills adapted for breathing in water, this respiratory organ seems to have altogether disappeared, having been entirely replaced by lungs. This species, *Cerithidea obtusa*, occurring generally on muddy banks all through the Sundarbans, dies when immersed in water for any length of time. Dr. St. further observed that he was most anxious to examine regarding this very peculiar change some other specimens of the same species also occurring along the Arracan coast, in places where pure sea-water has full access. Three species of LITTORINIDÆ, occurring at Port Canning on muddy banks, and on trees and bushes near the river are, in this respect,

equally interesting, and so is also the animal of Mr. W. T. Blanford's *Cremnoconchus Syhadrensis*; but all these possess gills, though they gradually become rudimentary and ultimately no doubt will disappear. Changes in other organs are similar to those just mentioned, they progress very gradually. The morphological studies on these subjects will be in every respect very interesting and important for the zoologist and in particular for the conchologist.

VI.—*Extracts from letters addressed to BA'BU RA'JENDRALA'LA MITRA by Professor C. HOLMBOE, of Christiania, giving abstracts of certain papers lately published by him; by BA'BU RA'JENDRALA'LA MITRA.*

Adverting to his paper on the relation which formerly existed between the ancient weights of Southern India and Scandinavia, Professor Holmboe says, "While looking for corresponding terms for the weights of Southern India and Scandinavia, I have discovered that in the middle ages, there was current in Russia a *grivna* which was reproduced in the *marc* of Scandinavia and the *ser* of India. The *grivna* subsequently passed into the *grivenha*, that is to say, the 'small *grivna*,' when the Russians adopted a lb of two *grivenha*. There have been found in Russia a great number of bars of silver, the weight of which is equal to the *marc* of the ancient Scandinavians, and as among them rings of the same metal represent a demi-marc, so in Russia they divided the *grivenha* into two, and called them half-roubles—a name which was gradually used to designate the Russian dollar of a smaller weight.

"In another Memoir I have demonstrated that the resemblance of the sepulchral mounds of Norway with the topes of Asia, concerns principally the series of rocks which surrounds the base of the monuments which formerly contained images of the Linga of the Indians. There are preserved in our museums some specimens of the Linga, found under ground, and made of white marble or of a whitish calcareous stone. I have spoken of these in my memoir on *the traces of Sivaism in Europe*, and given drawings of them."

In a Memoir on the figure of a boar on Gallic and Indian coins, the author notices the similitude between certain accessories which accompany them. On the Gallic coins, the boar is placed at the end

of a flag-staff, which is also the case in some coins and seals of India. On other coins the boar is accompanied with a dart or a knife as in Gallic coins. Such resemblances lead one to suppose that the two races have followed a common prototype. It would perhaps be an obstacle to this hypothesis that they were so widely separated by time and distance. The dynasty of the Chalukyas of Dekkan who adopted the type of coin which we allude to, is known but from the beginning of the 5th century of our era; they have, however, preserved a tradition that 59 generations of their ancestors had ruled in the countries to the north of the Nerbudda, and consequently not far from the common cradle of the Indo-European race as well as of others.

In another essay, that on some lately discovered sepulchral tumuli, containing more than one cell and one urn, the author, after giving a list of a number of tumuli in Scandinavia in which cells and several urns have been discovered, placed partly horizontally side by side, and partly vertically at different heights, remarks that the archaeologists of the North are ordinarily of opinion that such tumuli are destined to receive each the remains of the different members of one particular family. The author, however, does not participate in this opinion; he thinks that the explanation regarding these tumuli and their accessories, should be sought by comparing them with the topes and tumuli of Asia. It is known that in them there have been discovered more than one cell and one urn, the same as in the monuments of the North, and Mr. Holmboe finds the solution of this peculiarity in the description of the erection of the Mahástupa of Ceylon. The Mahávanso (Turnour's Translation, I p. 29,) relates that upon Rájá Dhuthagamani's having laid the foundation of the monument, in the second century before our era, and deposited the relics of saints in his cell, thousands of relics were deposited by the people on the principal cell. This narrative leads to the conclusion that a great number of persons had preserved the relics of a number of dead of their family in order to avail themselves of the occasion to deposit them in a magnificent monument; and as the narrator does not describe this affair as anything extraordinary, we may suppose that the placing of different relics in one monument was a common custom. As supports to this hypothesis, Mr. Holmboe cites many examples of relics which had been preserved for a long time before getting a resting place in a monument, or under the earth.

In pagan times, when the Scandinavians had the custom of burning their dead, they could without inconvenience preserve the relics somewhere, waiting for the occasion of the erection of a monument where they could be finally deposited. Hence it is to be supposed that the plurality of relics in a monument is not always due to one family only, but sometimes to different families.

Bábú Pratápachandra Ghósha exhibited a magnificent Persian MS. of Jámí's *Khiradnámah-i-Sikandarí* belonging to him.

Mr. Blochmann said that the MS. was written in 945 A. H. (or 1538 A. D.) at Bukhárá by a copyist of the name of Mír 'Alí. Though the writing is truly beautiful, the copyist does not appear to be the famous Mír 'Alí of Harát, who is mentioned by Abulfazl in the *Áín* (Translation, p. 102); for the famous Mír 'Alí, according to a statement in the *Mír-átul 'A'lam*, died in 924 A. H.

The MS. also bears on the fly-leaf the autographs of Jahángír and Sháhjahán. They are—

الله اكبر

پنجم آذر سنه داخل كتابخانه اين نيازمند درگاه الهي شد حرره نورالدين
جهانگیر بن اکبر پادشاه در خط اول در تصویر میویم * (sic)

Alláhu Akbar!

On the fifth A'zar of the first year this book was put into the library of this adorer of the throne of God. This has been written by Núrud-dín Jahángír son of Akbar Pádisháh, on the first page of the MS., and on the third page of the pictures.

بسم الله الرحمن الرحيم

این خردنامه سکندری که نگاشته نادره عصر ملا میرعلیست بقاریخ بیست
و پنجم ماه بهمن الهي موافق هشتم شهر جمادی الثاني سنه ۱۰۳۷ هجری
که روز جلوس مبارک است داخل کتابخانه این نيازمند درگاه شد حرره
شهاب الدین محمد شاه جهان پادشاه ابن جهانگیر پادشاه بن اکبر پادشاه
غازی * قیمت سه هزار روپیه مقرر شد *

In the name of God, the merciful, the clement!

This copy of the Khiradnámah-i-Sikandarí, which is a master-piece of Mullá Mír 'Alí, was put into the library of this adorer of the throne

on the 25th Bahman [of Akbar's Era], corresponding to the 8th Jumáda II., 1037 A. H., which is the auspicious day of my accession. This has been written by Shihábuddín Muhammad Sháh Jahán Pádisháh, son of Jahángír Pádisháh, son of Akbar Pádisháh-i-Ghází. The value of this book has been fixed at three thousand rupees.

Jahángír's handwriting looks childish and stiff; Sháhjahán's autograph, which corresponds to the autograph in the Pádisháhnámah of the Society, is written in a clear and current hand.

Jahángír had early commenced to read. "He got his first lesson," says Badáoní, "on the 22nd Rajab 981 [when the prince was four years old]. His teachers were the pious Mauláná Mír Kalán, the *Hadís* collector (*muhaddís*) of Harát, an angel in human shape, and Mírán Sháh, son of Mír Jamáluddín Muhaddís. The first lesson consisted in learning and writing the formula—

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ عِلْمُ الْقُرْآنِ

In the name of God, the merciful, the clement, he has taught the Qorán."

The difference in the headings of the autographs is noticeable. The use of the formula *Alláhu Akbar* has been explained in the *Áin* (*vide* p. 166). Jahángír's religion was an extraordinary compound of Islám, Hinduism, fire-worship, and their superstitious ideas and usages. In his "Memoirs," he sometimes speaks of his father as a saint or prophet, and of the sun as God; he confirmed the Hindú practices introduced at Court by Akbar; he uses of dying Muhammadans the phrase *dar jahannam raft* (he went to Hell)—which Muhammadan writers apply to Hindús; he had been for forty years an opium eater, and was a drunkard from his sixteenth year.*

* Jahángír says in his Memoirs that at first he drank sweet wine, then 'araq *i duâtishah*, or doubly distilled arrack, increasing his daily quantum, in the course of nine years, to twenty *piyálahs* or six Hindústání *sers*, when he was saved from death by Humám, the Court doctor, who during the following seven years limited the allowance to seven *piyálahs*. The daily quantity of opium which Jahángír took, was subsequently limited to 8 *ratís*.

Akbar's two younger sons died of *delirium tremens*. The native Historians of India reveal an amount of drunkenness among Muhammadan and Hindú courtiers, before the arrival of Europeans in India, which, from the sober habits of the middle classes of both races, one would scarcely expect.

Sháhjahán was no drunkard. When twenty-four years old he drank, for the first time in his life, a cup of wine, 'to oblige his royal father.' *Tuzuk*, p. 150.

Sháhjahán, on the other hand, is looked upon by Muhammadan historians as the reviver of the Islám at the Moghul Court. He abolished most of the Hindú ceremonies, and the *sijlah*, or prostration, which Akbar and Jahángír had enforced. "When His Majesty [Sháhjahán]," says the *Pádisháhnámah*, "mounted the throne, he directed his imperial care to the re-introduction of the customs of the Islám, the strict observance of which had died away, and turned his august zeal to re-building the edifice of the law of the prophet, which had all but decayed."

This explains the Muhammadan formula which Sháhjahán has put over his autograph.

In conclusion, it is worth noticing that the autograph contains Sháhjahán's own statement regarding the day of his accession. The *Mir-át ul 'álam*, and the *Pádisháhnámah* refer likewise the accession to the eighth Jumáda II., but Kháfí Khán, whom Elphinstone follows, gives the seventh Jumáda II.

LIBRARY.

List of books, received since the last meeting.

. Names of Donors in Capitals.

Presentations.

Jahrbücher der K. K. Central-Anstalt für Meteorologie und Erd-magnetismus, von K. Kreil; Band I-VIII; Jahrgang 1848 1856.—KAISERLICHE AKADEMIE DER WISSENSCHAFTEN IN WIEN.

Beobachtungen von Sonnen-flecken und Bestimmung der Rotations-elemente der Sonne, von Dr. J. G. Böhm.—THE SAME.

Einfluss des Mondes auf die Horizontale Componente der magnetischen Erdkraft, von K. Kreil.—THE SAME.

Variationen der Declination der Magneten beobachtet in Krakau, von Dr. M. Weisse.—THE SAME.

Ueber die ewigen Gesetze der Natur, die Einfachheit, die Einheit und das allmähliche Uebergehen, von Dr. Boué.—THE SAME.

Ueber den täglichen Gang der vorzüglichsten meteorologischen Elemente aus den stündlichen Beobachtungen der Prager Sternwarte abgeleitet, von Dr. C. Jelinek.—THE SAME.

Die Algodon-Bay in Bolivien, von Dr. F. von Bibra.—THE SAME.

Einfluss des Mondes auf die magnetische Declination, von Dr. C. Kreil.—THE SAME.

Entwurf eines meteorologischen Beobachtunges-systems für die Oesterreichische Monarchie, von C. Kreil.—THE SAME.

Orographisch-Hydrographische Studien über das Gebiet des Oesterreichischen Kaiser-staates, von V. Streffleur.—THE SAME.

Bericht über das Erdbeben am 15th Jänner 1858, in den Karpathen und Sudeten, von L. H. Jeitteles.—THE SAME.

Anleitung zu den magnetischen Beobachtungen, von K. Kreil.—THE SAME.

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Einiges über Wasserstands—Beobachtungen und deren Aufzeichnung, von V. Streffleur.—THE SAME.

Die Höhenverhältnisse Siebenbürgens, von G. Binder.—THE SAME.

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Uebersichten der Jahres,-und Monats-mittel aus den während eines Zeitraumes von 20 Jahren in Lemberg fortgeführten meteorologischen Beobachtungen, von Professor Kunzek.—THE SAME.

Bericht über das von der Kaisrl. Akademie beschlossene meteorologische Unternehmen, von Professor Dr. Kunzek.—THE SAME.

Beitrag zur Klimatologie von Central Afrika, von dem W. M. Director Kreil.—THE SAME.

Beitrag zur Theorie der Gangainschen Tangentenboussole, von Dr. V. Pierre.—THE SAME.

Untersuchungen über das Atmosphärische Ozon, von P. A. Reslhuber.—THE SAME.

Ueber eine Methode, die Spannkraft der Dämpfe in der Luft direct zu messen, von Dr. V. Pierre.—THE SAME.

Ueber elektrische Lampen, von F. Pekarek.—THE SAME.

Tafeln zur Vergleichung und Reduction der in verschiedenen Längenmassen abgelesenen Barometerstände, von J. J. Pohl und J. Schabus.—THE SAME.

Ein Condensations-Hygrometer, von K. V. Sonklar.—THE SAME.

Ueber die Natur und die Wirkungen der Wildbäche, von V. Streffleur.—THE SAME.

Beiträge zur Kenntniss des Ozon und des Ozongehaltes der atmosphärischen Luft, von J. Pless und Dr. V. Pierre.—THE SAME.

Ueber die Verwendbarkeit des Mitscherlichschen Polarisations, Saccharimeters zu chemisch-technischen Proben, von Dr. J. J. Pohl.—THE SAME.

Ueber den Gebrauch des Thermo-Hypsometers zu chemischen und physicalischen Untersuchungen, von Dr. J. J. Pohl.—THE SAME.

Tafeln zur Reduction der in Milimetern abgelesenen Barometerstände auf die normal Temperatur von 0° Celsius berechnet, von J. J. Pohl und J. Schabus.—THE SAME.

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Ueber die Störungen des täglichen Ganges einiger der wichtigsten meteorologischen Elemente an Gewittertagen, von Dr. K. Fritsch.—THE SAME.

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Ueber die constanten Verhältnisse des Wasserstandes und der Beeisung der Moldau bei Prag, so wie die Ursachen von welchen dieselben abhängig sind, nach mehjährigen Beobachtungen, von C. Fritsch.—THE SAME.

Ueber die Temperatur-Verhältnisse und die Menge des Niederschlages in Böhmen, von K. Fritsch.—THE SAME.

Weitere Belege für eine seculäre Aenderung der Lufttemperatur, von K. Fritsch.—THE SAME.

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Vergleichende orographisch-hydrographische Untersuchung der Versumpfung in den oberen Flussthälern der Salzach, der Enns und der Mur, oder in Penzgau, Pongau und Lungau, von Profsr. Dr. J. R. Lorenz.—THE SAME.

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Die Diatomeen der Hohen Tatra, bearbeitet von J. Schumann.—**THE SAME.**

Diagnosen der in Ungarn und Slavonien bisher beobachteten Gefässpflanzen welche in Koch's Synopsis nicht enthalten sind, von Dr. A. Neilreich.—**THE SAME.**

Beitrag zu einer Monographie der Sciarinen, von J. Winnertz.—**THE SAME.**

India as represented in the Hymns of the Rigveda; by J. Muir.—**THE AUTHOR.**

Diseases of the Eye; by C. Macnamara.—**THE AUTHOR.**

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Professional Papers on Indian Engineering; by Major J. G. Medley, R. E.—**THE EDITOR.**

Ramayana, vol I, P. VI; by Hemachandra Bhattacharya.—**THE EDITOR.**

The Hill Tracts of Chittagong and the dwellings therein, with com-

parative Vocabularies of the Hill Dialects; by Capt. T. H. Lewen.
—THE BENGAL GOVERNMENT.

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The Annals and Magazine of Natural History, Vol. III. No. 16, 4th Series.

Comptes Rendus, Tome LXVIII, Nos. 9 to 14, 1869.

Journal des Savants, February, March, 1869.

The Quarterly Journal of Science, No. XXII, 1869.

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Revue Archeologique, March and April, 1869.

Revue des deux Mondes, 15th March, 1869.

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Westminster Review, April, 1869.

Sanskrit Wörterbuch, 39 Lieferung, Bogen 1—10.

The Indian Medical Gazette, Vol. IV, No. 7, 1869.

Dictionaries, by Zenker, Heft XIII, Bogen 121-130.

Original Sanscrit texts on the origin and history of the people of India, their religion and institutions, collected translated and illustrated; by J. Muir, D. C. L., LL. D., Ph. D.—Vol. III.

Travels of Fah-Hian and Sung-yun, Buddhist Pilgrims from China to India (400 A. D. and 518 A. D.); by S. Beal.

Exchange.

Athenæum, April, 1869.

Errata in the previous numbers of these Proceedings.

- Page 105**, lines 10, 12 and 28 for “A. E. Carlleyl” read A. C. L. Carlleyle.
- **127**, line 3, for “Rámahmaya” read Rámamaya.
- **128**, „ 7 & 9, for “Yajurs” read Yajus.
- **129**, „ 8, for “codices of two or three commentaries” read two or
three codices of the commentary.
- „ „ 16, for “between” read of between.
- „ „ 18, for “Dupetron” read Duperron.
- **133**, „ 8, for “the initial line” read initial lines.
- „ „ 28, for “A. C. Carllyle” read A. C. L. Carlleyle.
- **134**, „ 5, for “there” read their.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR AUGUST, 1869.

A meeting of the Society was held on Wednesday, the 4th Instant, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

Presentations were announced—

1. From the Government of India, Home Department. A set of twenty photographs of the caves and Temples of Nassick, taken by Mr. Sykes, photographer, Bombay.

2. From W. Oldham, Esq., LL. D., Ghazeepore. Specimens of bricks, bearing inscriptions, found at Musar near Arrah.

The inscriptions are *Páli*, but owing to the broken state of the bricks, the characters have not yet been completely deciphered. The fragments shew that each brick contained the same word.

3. From G. Smith, Esq., LL. D., a copy of 'Memorials of the Rev. John Pourie.'

4. From Father E. Lafont, S. J., a copy of 'Daily Meteorological Observations at the St. Xavier's College Observatory, January to June, 1869.'

5. From A. Cameron, Esq., a copy of a pamphlet on the Dyaks of Borneo.

6. From Mohendralála Sircar, M. D., a copy of the Calcutta Journal of Medicine, Vol. II, parts 2 and 3.

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected Ordinary Members—

J. W. Selbach, Esq.

Prince Jahán Qadr Mírzá Muhammad Wáhid 'Alí Bahádur.

The following gentlemen were named for ballot as Ordinary Members at the next meeting—

E. Hyde, Esq., Barrister-at-Law, proposed by Colonel Hyde, seconded by the President.

Major G. E. Fryer, Deputy Commissioner, British Burma, proposed by Colonel Sir A. P. Phayre, seconded by the Secretary.

J. Westland, Esq., C. S. Acting Secretary, Government of Bengal, proposed by Colonel H. Hyde, and seconded by the President.

J. H. Fisher, Esq., C. S., proposed by Mr. R. M. Adam, seconded by Dr. F. Stoliczka.

Geo. Latham, Esq., C. E., proposed by the President, seconded by W. King, Esq.

Babu Juddulall Mullick, proposed by Maulawi 'Abdullatif Khan Bahádur, seconded by R. A. Gubboy, Esq.

The following gentlemen have intimated their desire to withdraw from the Society—

W. A. D. Anley, Esq.

J. B. N. Hennessey, Esq.

The President stated that he had on the part of the Council to report to the Society, that the question of the cost and form of the publications of the Society had been fully discussed by them, and that taking into consideration the fact that the Proceedings of the Society, which at first extended only to a few sheets for each month, and contained little more than the formal business of the Society, had since then been vastly extended, and now contained many very valuable, although brief, contributions to the Society, and formed at the close of the year a very fair-sized volume, it had been resolved—That the rate of subscription for the Proceedings, to Non-Members, should be fixed at *Four Rupees* per annum, and that monthly numbers should be sold at *Eight Annas* per copy.

The prices, as originally fixed, of two annas per number to subscribers, and three annas to non-subscribers, did not in the present enlarged form of the Proceedings nearly cover the cost. The Proceedings would continue to be issued to the Members of the Society as at present.

The alteration in the price to take effect from the 1st of January, 1870.

The President said, he had further to report from the Council, that

good progress had been made in the preparation of a new Catalogue of the Library of the Society, the want of which was so seriously felt by all. Several members of the Library Committee had taken much interest in the matter, and it was hoped that a complete list might be ready before the close of the year. To enable this to be done satisfactorily, it was essential that the large number of books now in the hands of Members of the Society should be compared and checked with the lists. And the Council had therefore resolved that at the close of the rains, all books now borrowed by Members of the Society be called in, for comparison and entry in the new Catalogue. They proposed meanwhile to issue a notice to this effect, on the cover of the Proceedings, so that the Members might be prepared. The Council trusted that the Members would cordially second this effort to complete a Catalogue of their Library. And he might remark that the sooner the books were sent in, the sooner such as were again required could be returned to the Members. It was not intended to make this request for the return of books until after the rains, when they could be transmitted with greater safety.

The President said, I have the pleasure of exhibiting to the Society a coin or medal, which I had some time since received from Major Strutt of Kangra. I have made every exertion to have the history and date of this curious coin elucidated, but with very partial success. Immediately on receipt of the coin, I sent it with Major Strutt's note to Babu Rajendralala Mittra. Unfortunately, he was at the time very unwell, and returned me the coin very soon, saying, he had been quite unable to give to it the attention it deserved. But he thought the legend was in Arabic character. I then submitted it to our Secretary, Mr. Blochmann, who being much pressed with other work at the time, was unable to give any very careful examination of the coin. I then sent it to Mr. E. C. Bayley, and received from him in reply the following note :—

“I return *per dak* Major Strutt's coin. I have little doubt of the *class* of coins to which it belongs.

First of all, however, I should say I believe it to be a *forgery*—a cast that is from an original, and in casting the letters of the inscription have become more confused and obliterated than in the original, itself much worn and corroded.



I take it to belong to a series struck by a line of Turkoman Princes, surnamed "Ortokites," from "Artak" or "Ortok," one of their progenitors. The first of their line who figures in history, was this chief named Artak ibn Aksab, who seized Jerusalem about the close of the 11th century. He died about 1091, and his sons were driven out and founded two dynasties, one over 'Irâq, the other in Syria, first at Diyarbakr, then at Mardin. To the latter belonged the celebrated Salâhuddîn, or Saladin, and to it I think belongs this coin, though I suspect it is an unpublished type. I am not quick at reading the old Square Cufic in which the legend is embodied, and the characters, as I say, are very worn. I think, I can read 'Salâhuddîn, and 'Tartash' or 'Taktash' or 'Tabaktash,' but I can find no name like the latter given in the lists.

The two elephants have an oriental touch, and the lion and scorpion belong, I have no doubt, to some zodiacal reference. The coin or medal was probably struck in commemoration of some special event."

On again receiving the coin, I had hoped that possibly Mr. Blochmann would have been able to investigate it more closely. But Major Strutt has requested that it may be returned to him, and there is therefore no time at present to do more than exhibit it to the Society, and ask any of the members present if they can throw any further light on the question.

The following papers were read—

I.—*Extract from a report by Captain R. A. Cole, on Cromlechs in Southern India.*

"The Chief Commissioner inspected some cromlechs discovered on the top of the Moory Betta hill in North Coorg, and directed some to be excavated. Some of these had concentric rows of upright stones, and two of them had upright slabs arched above, so as evidently to have formed an arched entrance within the enclosure. Portions of the arches have been destroyed by the ravages of time. The space within the concentric rows of stones was excavated, and earthen vessels of the exact pattern and description found elsewhere were discovered, but *all in miniature*. These vessels bear the same relative proportion to the larger vessels found in the cromlechs elsewhere as the small toy chatties of native children do to the larger vessels in common use at

the present day. Several beads and tubes, bored through and evidently portions of necklaces were also found. These are of the colour and description of agate and have circles in white round, with a zigzag pattern in white in the centre."

A conversation ensued in which the President and several Members joined. The clay vessels which Capt. Cole had kindly forwarded to the Society, unfortunately arrived greatly broken.

II.—*Notes on a Copper-plate Inscription in the possession of certain Kols at Nágpúr, by BABU RAKHAL DAS HALDAR, Special Commissioner, Chotá Nágpúr.*

I forward a fac-simile of a copper-plate inscription, insignificant in itself, but of some consequence from the fact that certain Kols of Chota Nagpur converted to Christianity are carrying it about as the original paṭṭá granted by the Acahárájá of Chota Nagpur surrendering half of the country to the Kols.

The agitation recently set on foot by a number of converted Mundás and Oráons anent their rights as peasant proprietors, has become a matter of some notoriety. Reduced to a state of serfdom for some centuries past by the Hindu landlords, these people have, since their conversion to Christianity, begun to realize their own position; and with remarkable zeal and unanimity of purpose, have consistently endeavoured to better their condition, and have even induced the Government to pass an act which promises to secure them their just rights. It has, however, been known to the local authorities that the zeal of these Kols frequently outran their discretion and knowledge; and the object of my sending the fac-simile to the Society is to present a case in point. I trust that the matter may obtain publicity by means of the Society's "Proceedings." It is exceedingly probable that by exhibiting the original inscription, the 'agitators' have induced many a poor and ignorant Kol to part with his hard-earned money in support of their common cause.

The inscription is in Sanskrit, in Oriyá character. It is a grant of a village by one Rájá Jayanta Sinha and his wife Ratna Kumári to a Brahman by name Kásínátha Madher. The date is 1861, Samvat, Áshárh, Sunday, when an eclipse seems to have happened. From the Chakra Santak, or representation of

Vishnu's discus on the top, the inscription appears to belong to Sambhalpur or Sonpur, the Nagpur rājās never having used the insignia in question. The inscription has to do as much with the Kols and their lands as with the mountains in the moon; it behoves therefore their advisers to warn them not to endamage a cause, in many respects a praiseworthy one, by making the copper-plate inscription the basis of their claim.

Below are my transliteration and translation of the inscription, the doubtful words or passages being in Italics.

Transliteration.

Srimadvīra Jayanta Sinha nripati-*stat 'vrekshtha patni tathā.*

nāmnā Ratna Kumārikā gunavatī rājnām kule bhāvinah,

bhūpālā nihayā chate navaratam arinwantu bho mad vachō.

yaṣṭām peḍa kaleti lokaviditam grāmam praditsurmudā, (I).

Ashārhe Ravibāsare subha tithau *tatrōparāge sinī.*

vālyām vai* dwija deva vahni savidhe kṛitwā suvākyam mahat,

grāmah saivalani jalāsaya vanārāmādri kāsṭhādibhir.

yukta swarna nidhānakhāta sahito dattah sasimomayā (II).

Biprāya veda-vidushe bahu-srutāya sántāya karmani-nije-parinish-
ṭhatāya deva-dwijāti-gurupāda-ratāya Kāsināthāya kántavapushe gupā-
vattarāya (III).

Rakshantu kīrtimatulam mamatavadete yevātra lobha vasatah
pravilopayanti te Somalendu (?) Vimalaswara Dharmarāja pādeshu
vipriyahrido narake pateyuh (IV).

Samvateshṭā dasa sate ekashasṭyuttarākhyake.

Vikramāditya bhūpasya nirmitā tāmra putrikā (V).

Kasinātha Madhu srimān Vanamāli samanwitaḥ.

Swarbhānu vatsare dattam bhunkshwa grāmamakaulakum (VI).

Sahi.

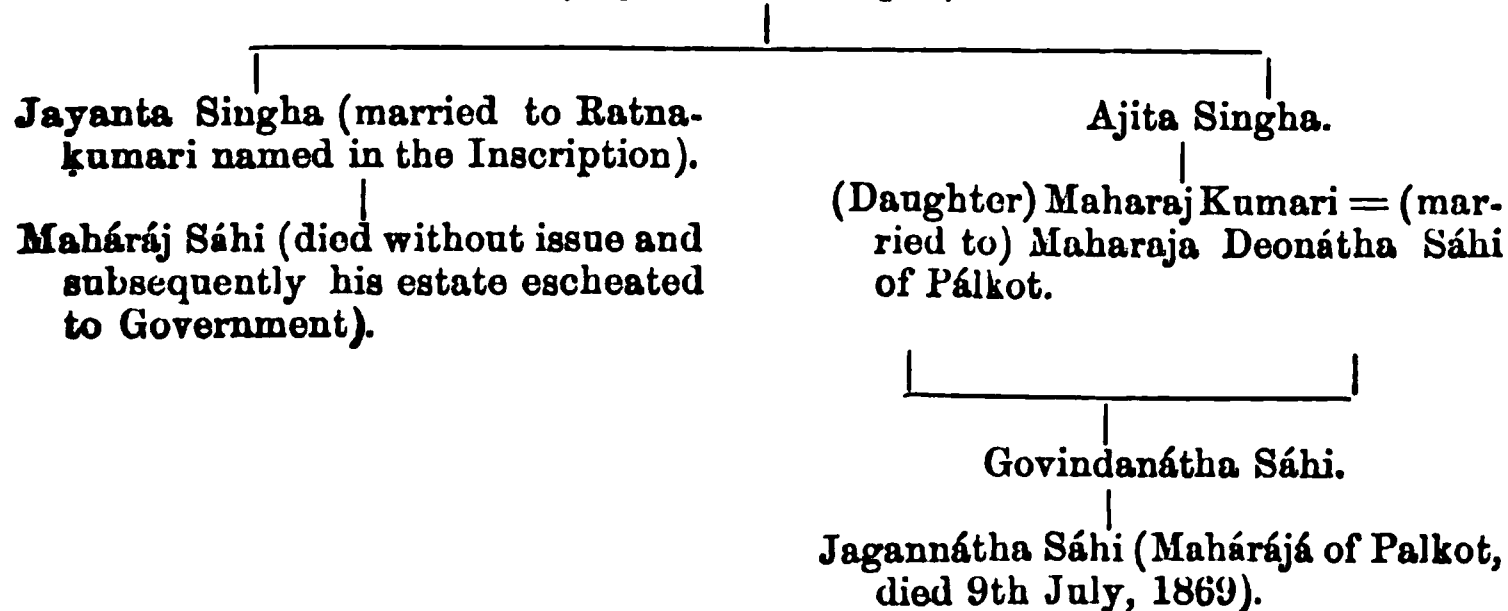
In conclusion, I have to add that I have not been able to discover how the plate fell into the hands of the Kols. I was told, it was found near Ladhma, some fourteen miles south-west from Ranchi; could it be supposed that some native of Sambhalpur or Sonpur had mislaid it on his way to the head quarters of the South West Frontier Agency?"

Translation.

“ The distinguished Rajni, by name Ratna Kumári, chief consort to the illustrious and valorous Jayanta Singha (1) lord of men, asks this constantly of the princes who may be [born] in her race : Hear ye my words ! I am desirous of giving away that village known in the country as Támperkalá (2) ; [accordingly] on Sunday in *Asháṛha*, in the auspicious *tithi*, the moon being eclipsed (3), I made good my promise in the presence of the gods and the Brahmanas, with all due formalities.* The village with its rivers, tanks, forests, groves, hills, woods, veins of gold, &c., wines, and the boundaries, I present to the Bráhmaṇa Kásínátha (4), who is versed in the Vedas, well informed, of a quiet turn of mind, attentive to his duties, devoted to the feet of the twice-born and the spiritual guide, being also handsome in person and full of merits. Let them preserve this my incomparable work of fame. Those who, being subject to covetousness, shall rescind this, shall, with hearts not devoted to the feet of Somalá (5), Indu (6), Vimale Swara (7), and Dharmarája (8), fall into the hell. In the Samvat year 1861, of King Vikramáditya, this copper-plate was prepared, and the grant made to Kásínátha, with Madhu (9) and the fortunate Vanamáli (10), in the year called Swarbhánu (11). Enjoy the village without impediment. Approved.”

(1) Rájá of Sambhalpur. The following table shows his connection with the zemindar family of Pálkot.

Abhaya Singha.
(Rájá of Sambhalpur).



* In his second note, Bábu Rakhal Dás Haldár, proposes the following translation—

- (2) This is a rather large village within a few miles of Sambhalpur.
- (3) I have verified this eclipse of the moon by referring to the almanac of 1861, Samvat.
- (4) Kásínátha Dása, Purohita to Rájá Jayanta Singha and Ráni Ratnakumári.
- (5) The guardian (female) deity of Sambhalpur.
- (6) The moon having been the prominent object on the night the grant was made, allusion has been made to her.
- (7) The guardian (male) deity of Sambhalpur.
- (8) Yama, or the god of justice.
- (9) Kásínátha's brother and Negí, or steward, to Ráni Ratnakumari.
- (10) Kásínátha's youngest brother, and Khánsámán or assistant Dewán to Ráni Ratnakumari.
- (11) This is probably the name of one of the years of the astronomical cycle of 60.

In a second note, received the day previous to the meeting, Bábú Rakhál Dás Haldár continues—

“A late trip to Pálkot has enabled me to subjoin a few notes. The Ráni Ratna Kumári, appears to have been at one time well known in the southern parts of Chota Nagpur; she resided at Rámpur in parganá Basiá, while her husband Rájá Jayanta (*vulgo* Jayati) Singha of Sambhalpur was captured and carried away by the Barghis (Bághis?), or Marhattas. I have been told that there was a civil suit regarding the village mentioned in the inscription. It was tried by the British Officer in charge of Sambhalpur, and the copper-plate was put in evidence. The decision in that case was appealed against in the Court of Mr. Allen, Agent of the Governor-General, South West Frontier, and of course the records were brought to Ranchi. Subsequently, the Mutiny of 1857 occurred, and in the general confusion, the plate fell into the hands of certain crafty Kols who did not scruple to use it as the original document, conferring half of Chota Nagpur on their ancestors! Of course, these men have taken care not to adduce the plate as evidence in any suit; I have been informed that they would not lend it to Colonel Dalton even for a day; they have duped only men of their own race.”

“Having made the magnanimous resolution before the twice-born, the gods, and the fire, on Saturday, in Ásápha, the *tithi* being auspicious, and an eclipse occurring on the occasion of the new moon which commenced on the fourteenth lunar day, &c.”

I.—*Contributions to the Chronology of the reigns of Tímúr and his Descendants up to Sháhjahán, No. I. By H. BLOCHMANN, Esq., M. A., Assist. Professor, Calcutta Madrasah.*

The object of this paper is to collect the statements of several Indian Historians regarding the dates of birth, accession, and death, of the Timurides up to Sháhjahán. For no period of Indian History do we possess better materials than for the times of the Moghul emperors; we have contemporary histories, and even autobiographies, and yet, the chronology of their reigns is by no means so satisfactory as we might expect from the number of historical works. Differences in the dates of events of less importance are common enough, and may even be met with among modern Historians. But it is a matter of surprise, if historical writers disagree on more important dates, such as the birth, the accession, or the death of a king.

In some cases chronological differences are traceable to the carelessness of the historians. The *Ṭabaqát i Akbarí* by Nizámuddín of Farrúkábád affords a remarkable example. Of its chronology Badáoní says (I, p. 342)—

“On Thursday, the 19th Rabí' I, 993, the season of spring had commenced, and the New Year's day of the Emperor's era took place. According to the work of Mírzá Nizámuddín Ahmad, who has arranged the history of His Majesty by years, the year 993 is the thirtieth year from the emperor's accession; but the fact is, that the second *qaran* (a space of thirty years) begins from the 25th Rabí' I, 994, when His Majesty was at Aṭak Banáras (Attock), as related below. The cause of this confusion is apparent* enough: the Mírzá has forgotten to take into account the intercalary days (*ayyám i kabísah*), which in three years amount to one lunar month, the difference between solar and lunar years being one year *per qaran*. As I have no astronomical tables with me, I have necessarily followed the chronology of the Mírzá; but the responsibility rests with him.”†

For similar hints *vide* Bad. II, p. 351, l. 1; p. 352; p. 356, l. 1; p. 365, middle.

The above remark of Badáoní shews that there is room for further

* In the edition of the Bibl. Indica, Bad. II, 342, read *hamáná* for *hamánjá*.

† In the text read *barúst* for *bariwayalast*.

enquiries, especially as later historians (e. g., *Kháfí Khán*) adopt the chronology of the *Ṭabaqát*. The dates given in the *Akbarnámah* on the other hand, are mostly solar, and rest upon the computations of Sháh Fathullah of Shíráz (*vide Aín Translation*, p. 38). Farishtah professes to follow the *Akbarnámah*, though he has used the *Ṭabaqát*; and so have other historians done, as the authors of the *Saláṭín i Chagatái* and the *Khuláṣatuttawárikh*.

On the whole, the chronology of Akbar's reign requires a thorough investigation; and unless a sufficient number of MSS. of the *Ṭabaqát*, the *Akbarnámah*, and *Badáoní*, be examined, we cannot expect to possess correct dates for his reign.

The introduction of Akbar's Solar Era, and its limited use, have also been the cause of much confusion. Thus Jahángír in his 'Memoirs' says that his son Sháhjahán was born in A. H. 999, or the 36th year of Akbar. But the fact is that the 36th (solar) year of Akbar corresponds to A. H. 1000, in the third month of which Sháhjahán was born.

Another source of confusion is this, that the date of proclamation of an emperor does not always coincide with the official date of his *julús* (accession), and the striking of coins. This holds especially for the reign of Aurangzeb, the dates of which are not always trustworthy.

In some cases, lastly, chronological differences may be traced to the copyists of the MSS. Their mistakes are confined to certain numbers. Thus *بیستم* *bístum* and *هشتم* *hashtum*, *هشتم* *hashtum* and *هفتم* *haftum*, *ششم* *shashum* and *شصتم* *shaṣtum*, *دو* *do* and *ده* *dah*, *سی* *sih* and *سی* *sí*, are frequently interchanged.

The Historians after Jahángír appear to have paid some attention to the chronology of former kings. The author of the *Pádisháhnámah* especially has devoted a long chapter (Edition Bibl. Indica I., pp. 41 to 80) to the chronology of the Timúrides, which chapter may advantageously be read by those who take a deeper interest in Indian history.

The following notes which refer chiefly to the genealogy of the Timúrides, are compiled from the *Akbarnámah*, *Badáoní*, *Farishtah*, the *Tuzuk i Jahángírí*, the *Iqbálnámah*, the *Pádisháhnámah*, the *Mir-átul'álam*, and *Kháfí Khán*. The remarks owe their origin to notes which I am the habit of taking when reading the editions of our

Bibl. Indica. With the exception of Stewart's translation of the *Wáqi'át i Humáyún*, I have consulted no European work.

I. Qutbuddi'n Amír Ti'mu'r.

Title, *Gurgán* (son-in-law.) Title after death, *Çáhib qirán i a'zam* (Lord of the great conjunction.) Born at Kash (Shahrsabz), Monday night, 25th Sha'bán 736, A. H. Father, Amír Turághái. Mother, Naginah Khátún. *Julás* (accession), Wednesday 12th Ramazán 771, at Balkh. Died on Tuesday night, 17th Sha'bán 807. Age, 70 years, 11 months, 22 days.

His four sons, *a.* Ghiyásuddín Jahángír Mírzá.

b. 'Umar Shaikh Mírzá.

c. Jala'luddi'n Mí'ra'n Sha'h Mírza'.

d. Sháhrukh Mírzá.

a. Ghiyásuddín Jahángír Mírzá. Died at Samarqand, A. H. 776. His eldest son, Muhammad Sultán, died on the 17th Sha'bán 805. He had three sons (Jahángír, Sa'd Waqqác, and Yahyá). His second son, Mírzá Pír Muhammad, governor of Ghazní, was killed on the 14th Ramazán 809. He invaded India with Tímúr. He had seven sons—Jahángír, Qaiçar, Sanjar, Sa'd Waqqác, Búzanjir, Khálid, قيد (?).

b. 'Umar Shaikh Mírza, died in Rabí' I., 796.

He had four sons—Mançúr, Sikandar, Rustam, Pír Muhammad, of whom Mançúr had two sons, called Báyaqrá, and Sultán Uwais. Sultán Uwais had a son, Mírzá Muhammad Sultán, whose two sons are called Ulugh Mírzá, and Sháh Mírzá. Ulugh Mírzá had two sons, Muhammad Sultán Sháh Mírzá, and Sultán Sikandar Mírzá. Muhammad Sultán Sháh Mírzá had four sons—1. 'Áqil Mírzá; 2. Mas'úd Husain Mírzá; 3. Ibráhím Mírzá (who had a son Muzaffar Husain Mírzá); 4. Muhammad Husain Mírzá.

c. II. Jala'luddi'n Mí'ra'n Sha'h Mírza'.

(Third son of Tímúr.)

Born 769 A. H., reigned for a short time, died 24th Zí Qa'dah 810. He had eight sons—

1. Abá Bakr Mírzá.

5. Muhammad Khalíl.

2. Alangar(?) Mírzá.

6. Sulta'n Muhammad Mírza'.

3. 'Usmán Chalbí(?).

7. Ijíl Mírzá.

4. Mírzá 'Umar.

8. Siyúrghtamash.

The mother of No. 6 is *Mihr Núsh*, ('az qaum i Fúlád Qayá.')

The above names of Mírán Sháh's eight sons are taken from the *Akbarnámah* (Lith. Ed.). In other Historical works, I have seen the names given as follows:—

- | | |
|----------------------------------|---------------------------|
| 1. Abá Bakr Mírzá. | 5. 'Umar Mírzá. |
| 2. Altakar (<i>sic</i>) Mírzá. | 6. Khalíl Mírzá. |
| 3. 'Usmán Mírzá. | 7. Sultán Muhammad Mírzá. |
| 4. Chalbí Mírzá. | 8. Siyurghtamash. |

The last had a son, named Mírzá Sultán Mas'úd.

d. Sháhrukh Mírzá. Title, *Kháqán i Sa'id*. Born on Thursday, 14th Rabí' II, 779. Died Sunday morning, 25th Zí Hajjah 850, after a reign of 43 years. His wife, Gauhar Shád Begum.

He had three sons. 1. Ulugh Beg Mírzá (*Malik i sa'id*), the Astronomer (*Çáhib i Zíj*); 2. Báyasanghar; and 3. Mírzá Ibráhím. Ulugh Beg's sons are Mírzá 'Abdullaṭíf and 'Abdul'azíz Mírzá. Báyasanghar's sons are Mírzá Abul Qásim (who had a son Sháh Mahnúd), Mírzá Sultán Muhammad (who had a son Yádgár Muhammad Mírzá), and 'Aláuddaulah (who had a son Mírzá Ibráhím). Mírzá Ibráhím's (3) son is 'Abdullah.

III. Sulta'n Muhammad Mírza'.

(Sixth son of II, and grandson of Tímúr.)

He governed Samarqand, and died during the reign of Sháhrukh (*d.*). He had two sons—

1. Sulta'n Abu' Sa'i'd Mírza'.
2. Minúchihr Mírzá.

(IV. Sulta'n Abu' Sa'i'd Mírza'.)

Born in 830. Commenced to reign when twenty-five years old, and reigned 18 years (over Afghanistan, and Independent Tartary). Killed on the 25th Rajab 873 by Yádgár Muhammad Mírzá, son of Sultán Muhammad Mírzá, son of Báyasanghar Mírzá, son of Sháhrukh Mírzá.

The *Akbarnámah* (Lithogr. Edition) mentions the names of ten sons—

- | | |
|---------------------------|-------------------------|
| 1. Sultán Ahmad Mírzá. | 6. Sultán Walad Mírzá. |
| 2. Sultán Muhammad Mírzá. | 7. Ulugh Beg Mírzá. |
| 3. Sultán Mahmúd Mírza. | 8. Abá Bakr Mírzá. |
| 4. 'Umar Shaikh Mírza'. | 9. Sultán Khalil Mírzá. |
| 5. Sultán Murád Mírzá. | 10. Sháhrukh Mírzá. |

In other histories I have found the names as follows :—

- | | |
|--------------------|--------------------------------------|
| 1. Ahmad Mírzá. | 6. Ulugh Beg Mírzá (ruler of Kábul). |
| 2. Mahmúd Mírzá. | |
| 3. Khalil Mírzá. | 7. Abú Bakr Mírzá. |
| 4. Muhammad Mírzá. | 8. Murád Mírzá. |
| 5. Sháhrukh Mírzá. | 9. 'Umar Mírzá. |
| | 10. Sultán Mírzá (<i>sic.</i>) |

Sultán Mahmúd Mírzá (2) had three sons :—1. Báyasanghar Mírzá ; 2. 'Alí Mírzá ; 3. Khán Mírzá. The last, Khán Mírzá, had a son Mírzá Sulaimán who, with his son Mírzá Ibráhim, lived at Akbar's Court.

Ulugh Beg Mírzá (6) had a son 'Abdurrazzáq.

V. 'Umar Shaikh Mírza'.

(4th son of Abú Sa'id Mírzá.)

Born at Samarqand in 860, A. H. Died Monday, 4th Ramazán 899, at Akhsíkat in Farghánah,* the pigeon house on which he stood flying pigeons having broken down. He had three sons and five daughters—

(1.) Zahi'ruddi'n Ba'bar.

(2.) Jahángir Mírzá.

(3.) Náçir Mírzá (called in some histories, *Mírzá Yádgár† Náçir*).

a. Khánzádah Begum, Báber's own sister, five years older than he.

c. ———, died shortly after birth.

b. Mihr Bánú Begum, sister of (3), eight years younger than Bábar.

d. Kár Sultán Begum.

e. Raziah Sultán Begum.

Mother of *Bábar* and of (a), Qatlaq Nigár Khánúm [or, Mihr Nigár Khánúm, according to *Kháfí Khán*]; mother of (2), Fátimah Sultán Begum ; mother of (3) and (b), Ghunchají Ummed Begum ; mother

* "Farghánah belongs to the fifth *Iqlím*, and is bounded on the E. by Káshghar, on the W. by Samarqand, on the S. by the mountains of Badakhshán. There are no mountains on the West. The *Saihún*, or *Ab i Khujand*, comes from N. E., flows towards West, passes N. of *Khujand*, and S. of *Finákit* (or *Sháhrukhiyah*), and then flows northwards towards Turkistán, near the confines of which country it loses itself in the sand. In Farghánah are seven districts, five South of *Saihún*, two North of it. In the South are Andaján, Os, Marghinán, Asfarah, Khujand ; in the North are Akhsí (Akhsíkat) and Kásán." *Akbar-námah*.

† Spelt in Prinsep's Tables *Jiadighiar*.

According to the *Pádisháhnámah*, Humáyún, at the time of his accession, was 23 *y*, 6 *m.*, 5 *d.*, old. The period from his *julús* to his death is 25 (lunar) *y.*, 10 *m.*,* 5 *d.*, hence at his death, he was 42 *y.*, 4 *m.*, 10 *d.* old.

Of his wives the following are mentioned :—

1. *Hamídah Bánu Begum*, Akbar's mother. Her title is *Maryam Makání*, 'holding the rank of the Virgin Mary.' She died 18th Shahríwar 1012, and was buried at the side of Humáyún at Dihlí. 2. *Máh Jújak (Chúchak) Begum*, mother of Mírzá Muhammad Hakim and Sultán Ibráhím. Badáoni and the *Akbarnámah* (II, 69), also mention a *Hájí Begum*; but this may be the title of the preceding.

Humáyún's sons :—1. Akbar.

2. Mírza Muhammad Hakim, born in 961.† Died of *delirium tremens* (*ra'shak*), 12th Sha'bán 993, (Bad. II, 346).

3. Sultán Ibráhím, who died as an infant.

Of Humáyún's daughters I find mentioned—(a.) Najíbunnisá Begum (*Tuzuk*, p. 68, and Preface, p. 5); and (b.) Bakhtunnisá Begum (*Kháfí Khán*, p. 226). A son of the former, Mírzá Wáli, was at Jahángír's Court (*Tuzuk*, p. 68).

VIII. Jala'uddi'n Muhammad Akbar.

Title after death, '*Arsháshyání*. Born in the night from Saturday to Sunday, 5th Rajab 949, at Amarkoṭ. *Julús*, about noon on Friday, 2nd‡ Rabí' II, 963, at Kalánúr, near Láhor, when Akbar had reached the age of 13 (solar) *y.*, 4 *m.*, 18 *d.*; or 13 (lunar) *y.*, 8 *m.*, 28 *d.* He died in the night between Tuesday and Wednesday, 12th Jumáda II, 1014, at the age of 63 (solar) *y.*, 1 *d.*, or 64 (lunar) *y.*, 11 *m.*, 7 *d.* Regarding the confusion as to the exact day of Akbar's death, *vide* my *Ain* translation, p. 212, note 2. He had reigned 49 (solar) *y.*, 7 *m.*, 13 *d.*, or 51 (lunar) *y.*, 2 *m.*, 9 *d.*

Akbar had *five* sons—

1. Hasan } twins, born 3rd Rabí' 972. They only lived
2. Husain } one month.
3. Salím [*Jaha'ngi'r*].

* The Edition of the *Pádisháhnámah* has wrong دو for ۵د.

† His *kunya* (ابوالمفاخر *Abul Mafákhir*, or ابوالفضائل *Abul Fazáil*) gives the *Tárikh* (961); *vide* also Bad. II, p. 56.

‡ Stewart, p. 121, says, 3rd Rabí' II.

4. Sultán Murád.

5. Sultán Dányál.

daughters, I find three mentioned—(a.) Sháhzádah Khánum, three months after Salím, in 977. (b.) Shukrunnisá Begum; and Árák Bání Begum, both born after Sultán Dányál.

Akbar's wives the following are mentioned :—1. Sultán Raqí-Begum, (a daughter of Mírzá Hindál,) who died 84 years old, on the Jumáda I, 1035, (*Tuzuk*, p. 401). She was Akbar's first wife (*zan i*), but had no child. She tended Sháhjahán. Núr Jahán (Jahán-wife) also stayed with her after the murder of Sher Afkan. Sultán Salínah Begum. She was the daughter of Gulrukh Begum (above under Bábar, p. 213) and Mírzá Núruddín Muhammad. Jahán had destined her for Bairám Khán, who married her in the beginning of Akbar's reign. After the death of Bairám, Akbar, in 968, married her. She died 10th Zí Qa'dah, 1021. As a poetess, she is known under the name *Makhfi* (concealed), and must not be confounded with Zebunnisá* (a wife of Aurangzeb's), who has the same poetical name. 3. The daughter of Rájah Bihárá Mal and sister of Rájah Jawán Dás; Akbar married her in 968, at Sánbhar. 4. The beautiful wife of 'Abdulwási,' married in 970, (Bad. II, 61). 5. Jodh the mother of Jahángír. Her name is not mentioned by any Muhammadan historian.† 6. Bíbí Daulat Shád, mother of (b.) and *vide* *Tuzuk*, p. 16.

Sultán Murád, Akbar's fourth son, was born on Thursday, 3rd Muharrar 978, and died of *delirium tremens* in 1006, at Jalnápúr in Baránuk, p. 15; Akbarnámah II, p. 443; Kháfí Khán, p. 212). He was nicknamed *Pahárá* (Bad. II, 378). He was *sabzrang* (of livid complexion), thin and tall (*Tuzuk*). A daughter of his was married to the prince Parwíz, Jahángír's son (*Tuzuk*, p. 38).

Sultán Dányál was born on the 10th Jumáda I, 979, and died of *delirium tremens*, A. H. 1013. Kháfí Khán (I, p. 232), says the news of his death reached Akbar in the beginning of 1014. He married, towards the end of 1006, Jánán Begum, a daughter of Mírzá 'Abdurrahím Khan Khánán (Kháfí Khán, p. 213). He was also betrothed to a daughter of Ibráhím 'Adilsháh of Bījápúr; but he died before the marriage.

Her charming Díwán was lithographed at Lucknow, A. H. 1284. Regarding her, *vide* Tod's *Rajasthan*.

marriage was consummated. He had three sons:—1. Tahmúras, who was married to Sultán Bahár Begum, a daughter of Jahángír. 2. Báyasanghar (*بایسنغر). 3. Hoshang, who was married to Hoshmand Bánú Begum, a daughter of Khusrau. Besides, he had four daughters whose names are not mentioned. Regarding the fate of Dányál's children, *vide* below p. 218. Dányál is represented as well built, good looking, fond of horses and elephants, and clever in composing Hindústání poems.

IX. Nu'ruddi'n Muhammad Jaha'ngi'r.

Title after death, *Jannatmakání*. Born at Fathpúr Sikrí on Wednesday, 17th Rabí' I, 977, or the 18th Shahríwar of the 14th year of Akbar's Era.

Julús.† 20th Jumáda II, 1014, (or 10th Abán of the 50th year of Akbar's Era), when he was 36 (solar) *y.* 1 *m.*, 23 *d.*, old, or 37 (lunar) *y.*, 3 *m.*, 3 *d.* He reigned 22 (solar) *y.*, 6 *d.*, or 22 (lunar) *y.* 8 *m.*, 9 *d.* He died of ضيق النفس‡ on Sunday, 28th Çafar 1037, at the age of 58 (solar) *y.*, 1 *m.*, 29 *d.*, or 59 (lunar) *y.*, 11 *m.*, 12 *d.*

Jahángír's wives (*Tuzuk*, p. 8, and Preface, p. 6). 1. A daughter of Rájah Bhagawán Dás, married in 993. She gave birth in 994 to Sultánunnisá Begum [*Kháfi Khán*, Sultán Begum], and, in 995, to Prince Khusrau. She poisoned herself with opium in a fit of madness apparently brought on by the behaviour of Khusrau and her younger brother Madhú Singh, in 1011, (*Kháfi Khán*, p. 227). 2. A daughter of Odai Singh [Mot'h Rájah], son of Rájah Máldeo, married in 994. The *Tuzuk* (p. 3) calls her Jagat Gosáyini. She is the mother of Sháhjahán. 3. A daughter of Khwájah Hasan, the uncle of Zain Khán Kokah. She is the mother of Prince Parwíz. She died 15th Tír, 1007. 4. A daughter of Rájah Keshú Dás of Rát'hor. She is the mother of Bahár Bánú Begum (born on the 23rd Shahríwar 998). 5. and 6. The mothers of Jahándár and Shahryár. Their names are not known to me. 7. A daughter of 'Alí Rái, ruler of little Thibet (*Bad.* II, 376), married in 999. 7. A daughter of Jagat Singh, eldest son of Rájah Mán Singh, (*Tuzuk*, p. 68). 8. Mihrunnisá Khánum, the wife of Sher Afkan. On her marriage

* His name is wrongly spelt in the *Tuzuk* and *Pádisháhnámah* (I, p. 73). The name occurs in verses and has the *wazn* of فاعلاتن.

† Regarding differences in date, *vide* my *Ain* translation, p. 212, note 2.

‡ Jahángír was stout; *vide* my *Ain* translation, p. 267, note.

h Jahángír she received the title of Núr Mahall,* and was later ed Núr Jahán. (Tuz. p. 156).

Jahángír's children. 1. Sultán Khusrau. 2. Sultán Parwíz.† Sultán Khurram (Sháhjahán). 4. Sultán Jahándár. 5. Sultán Shahryár. Two daughters are mentioned :—(a.) Sultán Nisár Begum; Sultán Bahár Bánú Begum.

Sultán Khusrau was born on the 24th Amurdád 995, (*Tuzuk*, p. 156); but Kháfí Khán says 997. He was married to a daughter of 'izam Khán Kokah, and to a daughter of Muzaffar Husain (*Tuzuk*, p. 156). His sons—1. Baland Akhtar, who died when young, (*Tuzuk*, p. 156.) 2. Dáwar Bakhsh [Buláqí], (*vide* below). His daughter, Bahmand Bánú Begum, was married to Hoshang, son of Dányál. 3. Shahasp, (*Gushtasp*, according to the *Khuláṣatuttawárikh*). Khusrau died on the 18th Isfandiyármuz, 1031.

Sultán Parwíz, born 19th Abán 997; died of *delirium tremens* on the 7th Çafar, 1036. He had a son who died when young. A daughter of Parwíz was married to Dará Shikoh.

Sultán Jahándár had no children. He and Sultán Shahryár were both dead at about the same time, a few months before Akbar's death (*Tuz. p. 17*). Shahryár was married in the 16th year of Jahángír, to the daughter of Núr Jahán by Sher Afkan, by whom he had a daughter, Arzání Begum (*Tuzuk*, p. 370). From his want of ability he got the nickname *Nishudaní* (fit for nothing). Khusrau, Parwíz, and Jahándár died before their father.

The history of the fate of Shahryár, Dáwar Bakhsh, and the sons of Dányál, belongs to the most confused portions of Indian History.

The *Pádisháhnámah* (I, pp. 73 to 80) says that, when Shahryár aimed himself emperor at Láhor, Báyasanghar, Dányál's second son, rebelled to him, and was appointed *Sultán Sipahsálár* of the army which Shahryár wished to oppose Aḩaf Khán, who was marching against him. Aḩaf Khán's object was to support Sháhjahán, at that time engaged in the Dak'hin. But in order better to oppose Shahryár, Aḩaf Khán had proclaimed Dáwar Bakhsh (also called بلّاقى) emperor. The other sons of Dányál, Tahmúras and Hoshang, were in Aḩaf's power. On the mere approach of the troops of the enemy, Shahryár's

for Núr i Mahall and Núr i Jahán, the Izáfat being left out in titles. So in the *ibqirán*.

There were 'several children' after Parwíz, that died. *Tuzuk*, p. 8.

soldiers ran away without firing a single shot, and Shahryár himself, together with his wife, was captured the next day and blinded by Aḥaf Khán. The Pádisháhnámah says nothing about the fate of Báyasanghar.

Sháhjahán, on receiving the news of the success of the dangerous game which Aḥaf Khán had played, was overjoyed, and sent him an order to kill Shahryár, Buláqí, Bulaqí's brother (Garshasp), Ṭahmúras, and Hoshang. These five were killed by Aḥaf Khán in the night from Tuesday to Wednesday, the 25th Jumáda I, 1037.

The account given in the *Tuzuk* (p. 421), is essentially the same. The author, however, says that there was *one* charge made on Báyasanghar's army, and that Shahryár was next day taken in chains before Dáwar Bakhsh, and was blinded two days later. On the third day Ṭahmúras and Hoshang were imprisoned [*quære*, by Dáwar]. The fate of Báyasanghar is likewise passed over in silence. The order of Sháhjahán specifies Dáwar Bakhsh, his brother Garshasp, Shahryár, Ṭahmúras, and Hoshang, to be killed.

Kháfí Khán's account as printed in the edition of *Bibl. Indica* (I, p. 390 to 394), is confused. He says, "the son (*sic*) of Dányál was with Shahryár" (p. 390, l. 9). There was some fighting, and Shahryár was next morning taken before Dáwar Bakhsh and blinded, and "the sons of Dányál were dealt with as Shahryár had been treated, and were made his companions." Sháhjahán's order only specifies 'Shahryár and the sons of Dányál' to be killed, which order Aḥaf Khán carried out. Kháfí Khán says nothing about Dáwar Bakhsh.

Elphinstone's account (p. 575) differs, in a few items, from that of the preceding three historians, though I do not know what sources he used for this portion of his history. He says that Shahryár *formed a coalition* with the *two* sons of his uncle Dányál [Ṭahmúras and Hoshang], and that there was a battle *which ended in a defeat*. Shahryár, he says, and the sons of Dányál, were afterwards put to death by order of Sháh Jahán.

In a footnote, Elphinstone says that Dáwar Shukoh [*Quære*, Dáwar Bakhsh] escaped to Persia, where he was seen by the Holstein ambassadors [in A. H. 1042].

The author of the *Khuláṣatuttawárikh* follows the *Tuzuk*, and says that Dáwar Bakhsh, his brother Gushtásp (*sic*), Shahryár, Ṭahmúras, and Hoshang, were killed by order of Sháhjahán.

X. Shiha'buddi'n Muhammad Sha'hjaha'n.

Title, *Çáhibqirán i sání*. Title after death, *Firdaus Áshyání*. Born at Láhor, 30th Rabí' I, 1000 A. H.* Historians make much of the time of his birth (end of the Millennium), and his first acts on his accession justified people to look upon him as the *mujaddid i dín i mubín*, the restorer of Islám.† *Julús*, 8th Jumáda II, 1037.‡ He had eight sons and six daughters:—(1.) Sultán Muhammad Dará Shikoh, born at Ajmír, Monday night, 29th Çafar 1024. (2.) Muhammad Sháh Shujá' Bahádur, born at Ajmír, Saturday night, 18th Jumáda II, 1025. (3.) Muhammad Aurangzeb, born on Saturday night, 15th Zí Qa'dah, 1027. (4.) Umméd Bakhsh, born near Sarhind, Wednesday, 11th Muharram, 1029. He died at Burhánpúr, in Rabí' II, 1031. (5.) A son who died before he had received a name, born 1032. (6.) Murád Bakhsh, born at Rahtás, Tuesday night, 25th Zí Hajjah, 1033. (7.) Luţfullah, born Tuesday night, 14th Çafar, 1036. Died 9th Ramazán, 1037. (8.) Daulatafzá, born Tuesday night, 4th Ramazán, 1037. Died 20th Ramazán, 1038. (a.) Húrunnisá Begum, born at Ágrah on Wednesday, 8th Çafar, 1022. Died at Ajmír, 4th Rabí' II, 1025. (b.) Jahán Árá Begum, who had the title of Mustatáb Begum, born Wednesday, 21st Çafar, 1023. (c.) Raushan Rái Begum, born at Burhánpúr, 2nd Ramazán, 1026. (d.) Surayyá Bánú Begum, died in the night before 20th Rajab, 1030; died on the 23rd Sha'bán, 1037. (e.) A daughter, born 10th Ramazán 1039; she died soon after birth. (f.) Gauhar Árá Begum, born at Burhánpúr, Tuesday night 17th, Zí Qa'dah, 1040.

The concluding dates of the reigns of Sháhjahán and his Descendants, will form the subject of the next paper.—

The President then exhibited three maps of the Sundarban.

The President said—It will be in the recollection of the members that some months since, an interesting paper on the Sundarban had been laid before them by Mr. Rainey, and that in the discussion which followed the reading of that paper, the Rev. Mr. Long had stated that he had during a visit to the Imperial Library in Paris, seen there a very old Portuguese map of the tract in question. Mr. Rainey was struck with the interest attaching to such old records,

* The Tuzuk says 999. † Vide Proceedings for July, p. 192. ‡ Kháfí Khán has 7th Jumáda II.

and wrote to Paris soliciting a copy of that portion of the map, which related to the Sundarban. He has this day sent me a note which I will take the liberty of reading to you, accompanied by the three small tracings which I lay before you. Mr. Rainey says—

“Agreeably to promise, I have much pleasure in forwarding herewith the tracings of the three ancient maps of the Gangetic Delta (Sundarban), which M. Cartamberd, the head of the Geographical Department of the *Bibliothèque Imperiale*, Paris, was good enough to send out to me.

You may recollect that in the course of the discussion on my paper on the Sundarban, (*vide* the Society's Proceedings of December last), the Rev. Mr. Long, made an allusion to a very old Portuguese map of the existing Sundarban tract, which (the late lamented) M. Jomard had shown to him, many years ago in Paris; and, thinking that a copy of it would prove very interesting and useful, I accordingly applied to him for it. But that venerable French *savant* having died, his successor, M. Cartamberd, kindly favoured me with the tracings of the three maps I now transmit to you, and which I have numbered as 1, 2 and 3, respectively.

The first of them is said to be a map of the 16th century, and on a reference to *Barros' Da Asia* in the Society's Library, I find it to be an exact tracing of a part of the map there given to illustrate the 4th Decada thereof.

The second is stated to be taken from the chart of the kingdom of the Great Mogul by N. Sanson, and is dated so far back as 1652. This map like the other two, has no scale affixed to it, which *desideratum* naturally causes much confusion.

The third and last is set down therein as taken from the new map of the kingdom of Bengal by order of the noble Sire Matthews Van den Broucke in the Atlas of Francor's Valentia to illustrate his work entitled 'Old and New East India,' 1724. This appears to be the most explicit and lucid of them all; it clearly indicates the five towns, *viz.*;—Pacuculi, Ciupitanaz, Noldy, Tipuria, and Dapara, the last of which is evidently the *only* place that can be recognized in the Revenue Survey Map of Colonel Gastrel's. From the similarity of position and name, it is evidently identical with the Daspara of the present day, formerly (doubtless) a flourishing seaport town, but *now* an insignificant inland village.

From all the maps it is very abundantly clear that the Gangetic Delta (Sundarban) did not in days of yore extend near so far south as it does at present. Between the existing two large rivers, to the east and west thereof, the accretion of land has increased immensely. This would incontestably establish that the sites of the five seaport cities before alluded to, are now very far in the interior, and, from the very great changes in the course of the larger streams, the remains of some of them may have been, perhaps, altogether washed away, whilst others may still lie concealed in the very heart of the forest and inaccessible.

I shall refrain from offering any further remarks at present ; but, in concluding, would venture to suggest to the Council of the Society the desirability of publishing the maps, at least Nos. 2 and 3, in the Society's Journal, as thereby Non-resident Members will have a fair opportunity of referring to them."

Several members made remarks on the intrinsic value of the maps. The President thought, it would be of no use to publish the maps without some explanatory remarks ; and he said, he was glad to state that the Rev. Mr. Long had promised to take the maps home with him, in order to lay them, together with some descriptive notes, at a future meeting before the members of the Society.

The meeting then broke up.

LIBRARY.

The following books have been added to the Library since the last Meeting.

. Names of Donors in Capitals.

Presentations.

Proceedings of the Royal Society, No. III.—ROYAL SOCIETY OF LONDON.

Proceedings of the Royal Geographical Society, Vol. XIII. No. 2.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

Bulletin de la Société de Géographie. Mars, Avril et Mai, 1869.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Journal Asiatique, No. 49.—THE ASIATIC SOCIETY OF PARIS.

The Journal of the Chemical Society, March, 1869.—THE CHEMICAL SOCIETY OF LONDON.

The Transactions of the Bombay Geographical Society, Vol. XVIII.—THE BOMBAY GEOGRAPHICAL SOCIETY.

Notices et Extraits des Manuscrits de la Bibliothèque Impériale, Tome XXI. Première Partie.—THE IMPERIAL INSTITUTE OF FRANCE.

Mineral Statistics, Coal.—THE GEOLOGICAL SURVEY OF INDIA.

Ueber den Giftapparat der Schlangen, insbesondere über den der Gattung Callophis (Gray), von Adolf B. Meyer.—THE AUTHOR.

Official Correspondence relating to the System of Revenue Survey in the Bombay Presidency.—THE GOVERNMENT OF BOMBAY.

Annual Report on the Meteorological Observations registered in the Panjab by A. Neil, 1868.—THE GOVERNMENT OF THE PANJAB.

Purchase..

Comptes Rendus, Nos. 15 to 21, and Tables des Comptes Rendus des séances de L'Académie des Sciences, Deuxième Semestre. 1868; Tome LXVII.—Journal des Savans, Avril, 1869.—Revue Archéologique, Mai, 1869.—Revue Linguistique, Avril, 1869.—Revue et Magasin de Zoologie, No. 4, 1869.—Revue des Deux Mondes, 1. Mai, et 1. Juin, 1869.—The Annals and Magazine of Natural History for May and June, 1869.—The Ibis, Vol. V. No. 18.—The Numismatic Chronicle, part I. 1869.—The Calcutta Review, July, 1869.—Shappunji Edalji's Gujrāti Grammar.—Haug's Outlines of Zend Grammar.—Satyam Jayati's Ritu Sanhāra.—Ouvry's Meghaduta.—Wheeler's History of India, Vol. II.—Thomson's Treatise on Thermo-Dynamics.—Etymologische Forschungen von Professor Dr. A. F. Pott, 2 Vols.—Notley's Comparative Grammar of the French, Italian, Spanish, and Portuguese Languages.—Cowell's Prākṛita Prakāsa.—Owen's Comparative Anatomy of Invertebrate Animals.

Lindsay's History and Coinage of the Parthians.—Reise der Österreichischen Fregatte Novara, Anthropologischer Theil.—Recherches sur la Faune de Madagascar et de ses dépendances, first part.—Böhtlingk and Roth's Sanskrit Wörterbuch, fasc. 36.—Annales Musei Botanici Lugduno-Batavi, edidit F. A. Gui-Miquel, Tome III. Fasc. VI. to X.—Simpson's India, Ancient and Modern, parts 5 and 6.—Tārīkh Badāon.—Tārīkh Farrukhābād.—Patwārī kī Kitāb.—Hālāt i Dehī.—Risālah i goi Chaugān.—Tārīkh i Rohilkand.—Reade's Landed Properties.—Risālah i 'Arúz.

Exchange.

The Athenæum for May, 1869.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR SEPTEMBER, 1869.

A meeting of the Society was held on Wednesday, the 1st instant, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

Presentations were announced —

1. From W. M. Smolly, Esq., specimens of Coral from the Andaman Islands.

2. From J. Avdall, Esq., a copy of Chronique de Michel le Grand, Patriarche des Syriens Jacobites. Translated from the Armenian into French, by Victor Langlois.

3. From M. L. Ferrar, Esq., C. S., three ancient Copper Coins dug up in Roy Bareilly.

The coins are Bactrian, and would appear to be known specimens. The locality is, however, noticeable, as such coins are generally found in the north-western districts of India.

4. From Babu Rakhal Das Haldar, Special Commissioner, Chota-Nagpur, the following Sanscrit MSS.—

Vatuka Bhairava Stava.

Budra Chándi Stotra.

Aditya Hridaya.

Adhyátma Bámáyana.

Jyotishatatva, by Raghunandana Bhattáchárya.

Prasna Kaumundi.

Játakálankára.

Harinámámrita Vyakarana.

Mahábhárata in Bengali verse, by Kasiráma Dása (incomplete).

Amara Kosha.

Mahábhārata, Virát Parva.

Bhagavat Gítá, with commentary.

Válmiki Rámáyana.

Tarpana Vidhi.

Sri Krishna Kavacha.

Rádhiká Stotra.

A Sanscrit Grammar, incomplete.

Bhágavata Purana, with commentary.

The President said, he had much pleasure in proposing a special vote of thanks to Babu Rakhal Das Haldar for the valuable present he had made to the Society. He would not ask a formal seconding of this vote ; but he believed he was justified in asking the meeting to support his motion by general consent.

The motion was carried by acclamation.

5. From N. S. Maskelyne, Esq., through Dr. J. Anderson, a copy of ' Report on Jewellery and Precious Stones,' and a copy of ' Notes on the Nature and Composition of the Murrhine Vases of the Ancients.'

6. From the Government Meteorological Reporter, a copy of ' Report of the Meteorological Reporter to the Government of Bengal for the year 1868-69, with a Meteorological Abstract for the year 1869.'

7. From Babu Gopinath Sen, a copy of the ' Facsimile of the indications given by the Anemometer at the Surveyor General's Office, Calcutta, on the 9th June, 1869.'

8. An English MS. Translation of the Táríkh Fíroz Sháhí, first part, by the late Major Fuller, through T. W. H. Tolbort, Esq., C. S., Dera Ismail Khán.

The President said he thought it proper to draw the attention of the meeting to this presentation. The MS., as it was, contained a good portion of the Táríkh i Fírúزشáhí, the text of which had been edited by Sayyid Ahmad, C. S. I., for the *Bibl. Indica*. The translation itself had been commenced by the late Major Fuller, Director of Public Instruction, Panjab ; and he was glad to announce to the meeting that Mr. Tolbort, whose excellent paper on the District of Lúdiáná would be in the recollection of the members, had declared himself ready to complete the English translation of this most important Historical work. He hoped that Mr. Tolbort would be inclined

to make over his translation, when completed, to the Philological Committee of the Society for publication in the *Bibliotheca Indica*. He felt convinced that it was of the utmost importance that the Society should themselves publish translations of their historical works, because it was desirable that such translations be made in India, where translators, much better than at home, could overcome the geographical and linguistic difficulties of the original texts. He was sure that as long as the public had no access to correct translations, the text editions of the *Bibliotheca Indica* would be, to a very large extent, but a treasure under lock and seal.

The following gentlemen duly proposed and seconded as the last meeting were ballotted for and elected Ordinary Members—

E. Hyde, Esq., Barrister at Law.

Major G. E. Fryer, British Burma.

J. Westland, Esq., C. S.

J. H. Fisher, Esq., C. S.

G. Latham, Esq., C. E.

Babu Juddulall Mullick.

The following gentlemen were named for ballot as Ordinary Members at the next meeting—

J. G. Delmerick, Esq., Assistant Commissioner, Rawul Pindee, proposed by Babu Rajendralala Mitra, seconded by the Secretary.

A. D. B. Gomes, Esq., Commissioner, Sunderbuns, proposed by the President, seconded by the Secretary.

B. Gray, Esq., M. B., Officiating Inspector General of Prisons, Panjab, Lahore, proposed by Colonel R. Maclagan, seconded by T. H. Thornton, Esq., C. S.

A. Thomson, Esq., Inspector of Schools, Fyzabad, proposed by Mr. H. Blochmann, seconded by the President.

A. Allerdyce, Esq., Serampore, proposed by J. T. Wheeler, Esq., seconded by H. Blochmann, Esq.

Babu Digámvara Mitra, and N. S. Alexander, Esq., C. S., have intimated their desire to withdraw from the Society.

Major W. A. Ross's re-election, announced in February 1869, has been cancelled at his own request.

The Council reported that they had elected Mr. G. Nevill to serve in the Library Committee, that Colonel H. Hyde had been nomi-

nated to act as Treasurer to the Society during the temporary absence of Colonel J. E. Gastrell, and that on the recommendation of the Philological Committee, they had sanctioned the publication of Major T. E. Gordon's English translation of Umar i Khayyám in the *Bibl. Indica*.—

These nominations and sanction were confirmed.

The following papers were read—

I.—*Notes on the remains found in a Cromlech at Coorg, which were exhibited at the last meeting, by T. OLDHAM, ESQ., LL. D., President.*

At the last meeting of the Society (4th August) some fragments of earthenware were exhibited which had been found in a Cromlech, opened out by the order of the Chief Commissioner of Mysore, on the Moory Betta Hill, in North Coorg. Unfortunately, these interesting remains had been very insufficiently packed, and had been so broken up, in their transmission by the post, that nothing could be made out of the many small fragments. One little vessel alone had escaped fracture.

Along with these were some curious 'heads' and a singular metallic relic, the nature of which it was not easy to make out by lamp-light.

After the meeting, I took these remains, and by a little patience, I was enabled to see that the greater portion of the earthen vessels to which they belonged, still remained, though so much broken up, and that only small parts were wanting. And, with a little care, the vessels have been again built up from their fragments, so far at least, as to enable accurate and full-sized drawings to be made of all. These drawings, as well as the putting together of some of the vessels, are due to the care and skill of Mr. Schaumburgh. Plate V. shews all these relics of the *full size*.

The earthenware is of two distinct kinds. The larger vessel, which stands upon three short legs or supports, is of the ordinary baked clay, of the common reddish-brown colour, and in no respect, as regards material, differs from the common earthenware vessels of the country. It is coarsely made, and for its size is thick and heavy: evidently no care has been taken to produce anything better than the commonest earthenware. This is the only specimen among those

Proc. Acad. Sci. Bengal. Sep. 1868.



J. Schomburgk Del.



sent to the Society, which has been baked. The remaining three specimens, as shown on Plate V., are of black unbaked (sun-dried) clay. The two upper figures represent miniature copies of the ordinary *ghurra* or water-pot. The lower figure is of a not uncommon form also, an open deep saucer or dish, with straight sides, not contracted towards the mouth. The drawings are all of the full size of the originals, none of these vessels just described exceeding $1\frac{1}{2}$ inch in height. The baked clay vessel with the small tripod support, although very large as compared with the others, is only $4\frac{3}{4}$ inches high including the feet.

As to general form, I can see nothing in these earthenware vessels differing materially from those manufactured and in use at the present day. The larger vessel has, perhaps, somewhat straighter and less curved sides than commonly given. But this is too trivial a difference to attract much notice. None of the vessels have been glazed; nor is there, on any of them, ornamentation of even the simplest kind. A few irregular lines which appear to pass round the body of the vessels and which may be seen in the figures, are due to irregularities in the badly tempered material of which they are constructed, and evidently not to any design.

With these little earthen vessels, were sent, as found along with them, "several beads and tubes bored through, and evidently portions of necklaces. These are of the colour and description of agate, and have circles in white round, with a zigzag pattern in white in the centre." This is Capt. Cole's description. These beads or tubes, are long subfusiform pieces of common cornelian, ground down carefully on the surface into an elongated barrel shape, and bored through the centre in the direction of the long axis: this boring having obviously been intended to facilitate the stringing together of these bugles or beads. Among those sent up, one is plain, the remainder are all ornamented with white lines, four or five in number, which pass round the bugle forming thin circles of colour. The exterior of these lines, that is, the two nearest to the ends of the beads, are continuous plain fine white lines: but the centre of the five is, in most of the specimens, a sinuous or zigzag line. No other pattern occurs among those sent up. There is also a small circular table or disc of cornelian rudely ornamented on both faces, by short radiating

lines in white, which are placed round the edge of the circle, but which though rudely radiating from the centre do not extend to the centre. This small tabular piece of cornelian is also bored through on the flat, and would seem to have formed an appropriate finish or terminal for a necklace, or ornament composed of these beads.

The only other article sent up by Captain Cole, remaining to be noticed, is also figured on Plate V. This is a circular disc, measuring $1\frac{1}{3}$ inch across, and in thickness, a little less than $\frac{1}{8}$ of an inch. The outer edge of this disc has originally been scalloped, or indented, in a succession of slight equidistant curves, now a good deal broken or worn. The centre of the disc is pierced by a circular opening of $\frac{1}{4}$ inch in breadth, surrounded by a raised curved rim or border. From this centre opening, there also passes to the circumference of the disc, an open slit or cut about $\frac{1}{3}$ inch in width, the edges of which are not ornamented with a rim similar to that encompassing the centre space.

These are all the remains which have been kindly transmitted to us by Captain Cole through the Chief Commissioner of Mysore. All are figured in the accompanying Plate.

I have spoken as yet only of the external form of them. I would add a few words as to the materials and construction. As already noticed, there is nothing in the material or form of the earthen vessels to distinguish them from such as might be made and are made at the present day, very commonly. They are rude in manufacture, and give no evidence of any particular care either in the preparation of the material or the fashioning of the vessels. Indeed, what evidence they do afford, rather proves an absence of this care.

But the other remains indicate a very different degree of manufacturing skill. The beads or bugles, as I have called them, are all of hard stone: they have been carefully selected, ground down to a tolerably uniform length, and size, and shape, and have been carefully bored. These results, in themselves, indicate an amount of skill, in those who manufactured these beads, by no means contemptible. It is almost impossible to conceive a large number of beads of this kind, of a very hard material, reduced to symmetrical and cylindrical form, without the use of mechanical appliances, which, however rude they may have been, evidence an acquaintance with grindstones, and grinding

materials, which the earlier stages of man's knowledge did not possess. But in addition to the grinding and polishing and boring of these stones, they have been carefully and very skilfully ornamented. This has been produced by cutting or incising into the cornelian, the pattern which it was intended to produce, and by then inserting into these incised patterns a pigment or enamel. In all the specimens now before us, this pigment is white, but I have seen beads similar in general principles of construction in which this enamel was black or coloured. The small amount of this which we possess, has prevented our attempting any analysis of it, with a view to ascertaining, if practicable, what the material used consisted of. It appears to me to have been baked, or slightly burnt in. Although hard and durable, it was of inferior hardness to the stone, into which it was inserted, as is proved by the surface being almost invariably worn down below the ground surface, and in a few cases, it appears to have fallen out, after the completion of the ornament, or during its use.

I have seen, in the North West of India, beads of greatly more elaborate and finished design and beauty, constructed, generally, in exactly the same way as these now spoken of, but with more advanced skill in the manufacture. These are invariably supposed by their possessors to be not of local make, but are spoken of as *Solimani*, and as brought from other countries. My colleague, Mr. Theobald, had a fine series of these, and will, I hope, lay them before the Society.

The metallic disc, which I have noticed above, appears to offer a still more interesting subject of study. At first glance, the general mass of the material of which it is composed appeared to be earthy impregnated with copper. But the weight of the ornament was too great to admit of this idea, and I carefully sawed off a minute portion, when the fresh cut shewed that the core was copper. On testing this, it was found to be very nearly pure copper, the only other constituent present being earthy impurities. But on this copper core, there has been laid a thin plate of gold, which originally covered the whole surface. It is now gone along the broken edges of the little ornament, excepting just in the indented hollows of the small scalloping of the edge. And it is also seen to be worn off the raised rim round the centre hole, in part exposing underneath the upper core. On the flat surfaces of the face of the disc, the gold plating remains tolerably perfect, broken

up by small projecting or slightly raised portions of the decomposing copper which have forced their way through the porous and unequal plate of gold. This gold is of lightish hue, and probably contains silver, but not in any quantity, as the hardness shews. The quantity which could be obtained without greatly injuring the ornament, was far too small to ascertain the proportions.

The thin plate of gold, and the copper one on which it is laid are quite distinct, and can with a little care, be separated in small pieces. The question naturally arises how was this made? By what process was this thin plate of a precious metal, so ingeniously laid over the core of a cheap material, to produce so excellent an effect? The two are remarkably well joined, and the workmanship would do no discredit to an excellent jeweller of the present day. In modern practice, the solution of the question would be extremely simple. Such a plate or thin layer of gold would be thrown down by electric deposition, and then the whole burnished up. But we can scarcely suppose that the principles of electro-metallurgy were known to the constructors of these Cromlechs, and some simpler process must have been, I think, used. I believe myself that this process was nothing more than the attachment of the thin plate of actual gold by continued pressure and working it into the surface of the metallic copper beneath. The native metallurgists who to this day produce such a durable work in the inlaying of gold, &c., use no other means of attachment; the gold is simply applied and punched or pressed into the incised pattern, and subsequently burnished up. And in the present case, I believe, no other means were adopted, but that the gold, in all probability in the state in which it was obtained, was simply applied to the surface of the copper core, and forcibly pressed into contact with it, and actually into it. The softness of the copper, and the irregularity of it, resulting from the admixture of little impurities, would admit of quite a sufficient intermixture of the surfaces of the two metals to cause very complete adhesion. I am the more disposed to think this was the process adopted, by seeing, that there has been a failure to produce an even, good surface, precisely at those points where this pressure or force could be least conveniently applied. For instance, on the surface of the narrow cut or slit passing from the centre to edge of the disc, and on the raised curved surface of the edge

itself. From all these the gold has nearly disappeared, while in the little hollow, between these scollopings, where pressure could be easily applied, and therefore adhesion more perfectly secured, it remains.

The total weight of this disc in its present state is 170.25 grains, sp. gr. of mass 8.11.

Whatever the process adopted, the result is excellent and abundant proof that the makers of this little ornament, the manufacturers of this early specimen of imitation jewellery, had advanced far beyond the earlier stages of the metallurgic arts.

But who were the makers? Were they also the people who constructed these rude cairns, and circles of stones and kistvaens? Or were these ornaments obtained from some other people or race, with whom they maintained intercourse? There is nothing in the materials employed which would force us to adopt the latter view. Both copper and gold could have been obtained within short distances. For the one, the material could be obtained in a state ready for immediate use, while the reduction of copper from its ores is one of the simplest of metallurgic processes, and was known at a very early period. Agates and cornelian were procurable in any quantity at no great distance either. So that, as far as the materials used are concerned, there is no necessity to suppose that these ornaments were of other than local manufacture.

The very brief description given by Captain Cole of the Cromlechs in which these were found gives us very little information as to the mode of their occurrence. He merely says: 'The space within the concentric rows of stones was excavated, and earthen vessels of the exact pattern and description found elsewhere, were discovered, but *all in miniature*.' I presume from this, that these remains were all found beneath the natural level of the surface of the ground. But the former portion of the description throws a doubt on this, for it says "two of them (the Cromlechs) had upright slabs arched above, so as evidently to have formed an arched entrance within the enclosure." It would appear that this 'arched entrance within' (? into) 'the enclosure,' would seem to have been on the level of the ground. It is of some importance to know exactly how this was. For, if reference be made to the earlier examinations of very similar remains in the closely adjoining districts, we find that these earthen vessels, of

the same pattern, were all carefully placed in symmetrical order and position in a chamber purposely excavated below the surface. (See the valuable paper by Mr. Babington 'On the Pandoo Coolies in Malabar,' in the *Trans. Literary Soc. Bombay*, iii. 324). This is also interesting from the evident separation of the smaller earthen vessels from the larger. In one of these repositories of the ashes of the dead, Mr. Babington found a chamber covered over by a very large block of stone; the one represented was from 6 to 8 feet in diameter, and from 2 to 3 feet thick in the centre, thinning off to the edges where it was not more than 6 to 8 inches. This formed the capping to a regularly excavated chamber, the rock (laterite) being cut down so as to form a ledge or shelf all round: below this level again, the rock was excavated forming a semi-oval conical cavity in the centre of which was placed a huge earthenware pot or chatty. This was covered, precisely in the same way as was the centre chamber at the top, by a mushroom shaped stone. In this large chatty, were placed other small ones, in which were deposited beads, bones, &c. Smaller earthen vessels were also ranged on the shelf, or ledge of the rock, with some iron instruments, and other things.

The large central chatty or earthen vessel which Mr. Babington found, in the cave or chamber he opened, was more than five feet high, and four feet in diameter, while some of the smaller ones were quite as miniature as those now in the table. It is vastly to be regretted that having examined this in place, and extracted from it the beads, small vases, &c., Mr. Babington, simply to facilitate his further research, had it broken up and removed in pieces. It proved to have been only half baked, the centre being black and gritty. Indeed to bake an earthen pot of that size, equally and well, would be by no means an easy task even now.

I have alluded in some detail to these researches of Mr. Babington, because it is by no means clear that the ground 'excavated' by Captain Cole was in its original state, or that some such chamber had not originally existed and been crushed in. If in his researches, Mr. Babington had been content to excavate only as far as the ledge of rock, he would have found nothing, but small earthen vessels also, and he might have been led to suppose that they were *all* in miniature. My first impression on hearing this was that the depository of some

favourite child had been met with, and in it had been placed the ornaments and toys, with which the child had amused himself while alive. But I do not think there is any sufficient proof that this was so.

The general character of these depositories was found by Mr. Babington to vary according to the nature of the soil or rock on which they were constructed. Where the soil is of considerable depth, the large vessel of baked clay is generally found alone, and is the depository of the bones, beads, arms, &c., which are found in most of these sepulchres; but where there is little soil or the rock comes near the surface, then a chamber is found regularly excavated, as I have described.

And to this chamber, an entrance was secured by cutting regular steps proceeding by an incline at the side to a doorway or squared entrance, which was subsequently closed by placing against it another squared slab of stone, covering the space.

As proof of the fact that these Kull or Coolies of Malabar are of very much the same age (although I believe later) as the so-called Cromlechs of Coorg, I may mention that the beads found in the one are in size, shape, material, style and mode of ornamentation, identical with those obtained from the others.

Now we have then the following facts as bearing on the question of the age of these very remarkable works, (and here I will take all as being of one great age, though I believe there is sufficient to shew a very large degree of progress in the industrial arts, during the very lengthened period over which the construction of many hundreds of these remains must have extended): we have carefully shaped stones of large size, chipped down to rudely symmetrical form, shaped into arched figures, and formed into regularly dressed openings; we have chambers excavated in hard material into symmetrical form, an entrance to these chambers provided by regularly cut stairs or steps; we have earthenware of two kinds, some of the larger pieces being of sizes which required considerable skill to bake even partially; and in some of the apparently later forms, we have earthenware ornamented by the use of a glaze, and the application of distinct rude ornamentation, as well as the use of peculiar and difficult formed shapes. (See illustrations to Mr. Babington's papers referred to.) With these we find numerous remains of iron weapons and tools, swords of the ordinary so called

Roman form, spears, axes, cleavers, &c. No coin of any kind has as yet been found in these places; and until the present case, I am not aware of any metallic objects having been discovered, except those iron remains just noted. All these facts, and more especially the free use of iron tools, and the tolerably well preserved state in which these have been found, (seeing the rapid decomposition which iron exposed to damp and air undergoes) lead me to believe that we shall err greatly if we attribute to these remarkable stone rings and erections any very great antiquity. And I believe the evidence is sufficient to shew that the knowledge of the industrial arts among the people who constructed these depositories of the dead, was sufficiently advanced to justify the belief that they were themselves the fabricators of the curious relics found with their bones and ashes. I believe they *could* have made them, whether they did or not.

At the same time, it is by no means improbable that they were procured by barter or otherwise from other races, with which they held intercourse. Possibly the false or imitation character of the small metallic ornament might tend to confirm this belief, or it may have escaped solely on account of its counterfeit nature, and have been deposited with the ashes of its owner, merely because it was of no intrinsic value. It is by no means improbable, in my mind, that it and many others of similar character may have been imported by the earlier European traders, many of whose fleets visited the well known harbours of the Malabar coasts some centuries since.

I can offer no conjecture what this disc was intended for, or what the object of the slit may have been. It could scarcely have been intended to be used as a brooch, on the same principle as the now well known Tara brooch found, with other slit brooches, in Ireland, inasmuch as in the present case, the material is of equal thickness and size throughout, and there would have been nothing to prevent the pin from slipping off. It was to be used separately, and was not attached permanently to any other article, as there is no trace of such a point of attachment, and the coating of gold has been originally extended over the entire surface.

I have laid these few remarks before the Society, trusting that they may excite the attention of any who may have the opportunity of extending our acquaintance with the remains of the races inhabiting

this country, before it passed 'under European sway. The study of the mechanical and industrial history of these races, as evidenced by the few remains which have been preserved to us, is one full of interest, but is also one which can only be successfully prosecuted by means of the combined labours and contributions of many.

II.—*The Nineteenth Book of the Gestes of Prithiráj by Chand Bardái, entitled "The marriage with Padmávatí," literally translated from the old Hindi by JOHN BEAMES, Esq., B. C. S. (Extract).**

I have selected this spirited poem as a first specimen of translation from the Prithirája Rásá, and it must be regarded solely as an essay in translation. Chand's language is archaic, his dialect is as much Panjábi as Hindi, dating from a time prior to the definite separation of the two languages, his poetic licenses are numerous and daring, the text of the sole manuscript I have yet had an opportunity of thoroughly studying is very corrupt, and I have no Pandit to help me. I rely chiefly on my own resources. I have, however, used with very valuable results, dictionaries of Panjábi, Sandhi, and Gujaráti, and a glossary of the Marwári dialect. Still much remains uncertain and conjectural, and I am open to any criticisms, and ready to admit that I may have made mistakes where "*tantum difficile est non errare.*"

Book the Nineteenth.

Here begins the marriage with Padmávatí.

Couplets (दोहा).

1. In the Eastern land there is a fort, lord of forts,
Samud Sikhar, hard of access ;
There lives a victorious hero, lord of kings
Of Jádav race, strong-armed.
2. With retinue, horses, elephants, much land
And dignity of a Pádsháh (पातिसाय रे मर्जाद)
A mighty lord to all his servants,
With pomp and standards very splendid.

Poem (कवि).

3. With many standards very splendid,

* The whole paper will be published in an early number of the Journal.

Song and music playing five times a day,*
 Mounting ten thousand horses
 With golden hoofs and jewelled trappings.
 A lord of countless elephants,
 A valiant army thirty lakhs strong ;
 A sole ruler wielding Siva's bow,
 Holding the earth in his sway.
 Ten sons and daughters all told
 Chariots of beautiful colours, very many
 Storehouses, countless millions of wealth
 Had he, Padam Sen, the victorious prince.

4. Padam Sen, the virtuous prince,
 In his house was a well-born dame,
 From her breast a daughter sprung
 Beauteous as a digit of the moon.
5. Fair as a digit of the moon,
 Fairer than the whole sixteen digits ;
 In her childish guise she rivalled the moon
 When he has drunk the *amrit* juice.

Like a lotus expanding through love of the moon-dew.
 She had stolen from the deer the glance of its eyes.
 She had [the beauty of] the diamond, the parrot, and the *bimb*.
 A pearl from head to foot, glittering like a serpent.

6. [This sixth stanza wants a line or two in my copy, and is hopelessly corrupt and unintelligible as it stands. I can make out allusions to the lotus, to Kāma, the god of love, to her name Padmāvatī, to her "swan-like gait," but nothing connected.]

7. She had all the auspicious marks [on her body],
 Well she knew the sixty-four arts, (कला)
 She knew the fourteen sciences, (विद्या)
 She was like the Spring among the six seasons.
8. Playing about with her companions
 In the gardens of the palace
 Her eyes lit upon a parrot,
 Then her mind was joyful.

* At his palace gate, as is the custom with Indian princes.

9. Her mind was very joyful
 Expanding like a lotus in the rays of the sun
 Her red lips thirstily opening,
 Likening the beauty of the parrot to the *bimb*-fruit.
She strove [to catch it] with eager eyes,
It resisted fluttering and struggling ;
 Avoiding its beak, she seized it,
 Then she took it in her own hand.
 Rejoicing with joy, pleasure in her mind,
 Having taken it inside the palace
 In a beautiful cage, inlaid with jewels
 She was taking and placing it.
0. In it she was taking and placing it,
 Went to play, forgetting everything,
 Her mind slipped away from the parrot
 Roaming and plucking flowers.
1. The parrot seeing the beauty of the princess,
 This form from head to foot,
 This finished work of the Maker
 This peerless model of a woman —.

Poem (कविता).

2. Wavy tresses fair to see,
 Rivalling the dawn, with a voice like the *koil*
 Fragrant as the blowing lotus,
 Swan-like her gait, slow-paced.
 White-robed, her body shines,
 Her nails are drops of *Swáti* (pearls) ;
 The bee hums round her, forgetting his nature
 In the flavour and fragrance of the god of love.
 The parrot looked with his eyes, and was pleased.
 (Said) " This beauteously moulded form
 " My Lord *Prithiráj* shall obtain
 " Forestalling *Hara*, the joy of *Umá*."

III.—*On the Moenas, a wild tribe of Central India*, by LIEUTENANT-COLONEL C. L. SHOWERS.

(Extract.)

[Received, in part, 2nd September, 1867.]

In considering the present condition of the Aborigines of India and taking it as a test of the character of the rule under which they have subsisted for many generations back, the Government of India need not, I think, fear comparison with any other Government under which Aboriginal races have fallen, whether in other British Dependencies or in Foreign States. The existence of the several local corps scattered throughout India, composed of Aboriginal races of various denominations, Bheels, Meenas, &c., and the high state of discipline and fidelity to our Government which some of them have exhibited, testifies at once to the wisdom of the policy pursued by the late rulers of India and to the capacity of wild tribes, albeit heretofore hereditary robbers, for military training and for being reclaimed as true and loyal servants of the Government which knows how to deal with them.* Nor does the process of breaking in take long comparatively. Outram raised the first Bheel Corps, that of Candeish, in 1831. In a few years, the men, weaned from the habits of a life-time as professional plunderers, became, united as a Corps, the main instrument of order in the district. The Meywar Bheel Corps was raised by Col. Hunter in the year 1841. I saw the first recruits enrolled, naked savages with bows and arrows, fresh from their native hills, which then as yet rang with the shrill *khilkee*, or Bheel war-cry. In 1850, it fell to my duty as Officiating Political Agent to inspect the corps, when it went through a field-day equal to any native regiment of the line. Again, during the late Mutiny of the Native Army in 1857, this same Bheel corps exhibited remarkable fidelity, operating even against the Mutineer regulars with a total absence of sympathy with them.

While one race of Aborigines occupying the western district of the Meywar States were thus being reclaimed from their lawlessnesses and reduced to habits of order and usefulness to our Government, another

* Akbar appears to have been the only Muhammadan ruler that tried to win over aboriginal tribes by forming them into military Corps. How he succeeded may be seen from the *Ain i Akbari* (Translation, p. 252).—THE EDITOR.

race, the Meenas, inhabiting the North Eastern districts under the same political jurisdiction, were yet revelling in the excesses of their immemorial lawlessnesses. And as this is the race referred to in the title of this paper, I may mention, in explanation of the circumstances under which the Meenas fell particularly under my observation, that in the year 1854 the lawless excesses of the tribe emboldened by long impunity had reached to such a pitch of audacity, that they attacked and pillaged several walled towns in the British district of Ajmeer, carrying off not only the entire plunder to their hill fastnesses, but numbers of the inhabitants also, holding them to ransom. It fell to my duty then to take them in hand, and proceeding to Jehazpoor, the centre of the disturbed district in question, measures for its tranquillization and for reclaiming the race were there devised and set on foot as remaining in progress at the present day.

From time immemorial, Jehazpoor, in the State of Odeypoor, had been a notoriously disturbed district. A brief period of tranquillity was accorded to Jehazpoor during the early part of the present century by the appalling severity of the measures of the noted minister Zalim Sing, after Jehazpoor fell into the possession of Kotah in 1806. On a robbery being traced to a village, it was surrounded, all the men found in it at once decapitated, and the women compelled to carry the bleeding heads in baskets-full upon their own heads, and walk in procession through the neighbouring villages singing their usual jubilee songs. There are men still living, and I have conversed with them, who have witnessed these grim processions. To guard against the possible recurrence of such fatal surprises, the inhabitants of some of the Meena villages have distributed themselves in detached huts on the surrounding knolls, serving as a chain of watch towers for mutual security. However revolting the system referred to, it succeeded in effectually checking the excesses of the Meenas during the period that Jehazpoor remained in the possession of Kotah. A gold bangle might drop off a woman's ankle (so an ancient of those days illustrated the fact), and there it would lie till the drift sand covered it; for woe to the village to which the bangle might be traced. On the restitution of the district, however, to Meywar in 1819, it soon relapsed into its former disturbed condition. Jehazpoor was in truth a position well chosen for the lawless occupation of professional marauders, being a

strong hilly and jungly country where the boundaries of four foreign jurisdictions meet, viz. Meywar, Boondée, Jeypoor, and Ajmeer.

There are twelve tribes of Meenas in Central India, but the one under notice is called the Purihar tribe. These are descendants of the Purihars, who were the dominant race in Marwar, till dispossessed of their ancient capital (Mundore) by the Rhatores towards the close of the 14th century. Though defeated, the tribe would appear not to have succumbed to the new rule, as there are no descendants of them, I believe, to be found in Marwar at the present day, but emigrating they got possession, subsequently, it would appear, of Bagherah in the present Ajmeer Istimraree and contiguous to some of their present haunts. This their genealogists represent to have been in the second generation from Nath Rao, the last Mundore Prince, with whom his dynasty perished. In a generation or two afterwards, they are found in the Chronicles lurking on the quadruple boundary above indicated, a race of outcasts without a common head, and such they have continued ever since, "their hand against every man and every man's hand against them," plundering in gangs and joining any of the great marauding movements that have from time to time been organized under noted leaders. Thus, in 1847, some of the boldest of the outlawed Thakur Jawahir Singh's followers were these Meenas. The same indomitable spirit which carried the Purihars forth out of the land of their lost dominion seems to have maintained them in a state of wild independence throughout the long interval since; for though nominally owning allegiance to the States upon the verge of whose territories respectively it has suited their purposes to locate themselves in *fallahs* or gangs, to increase probably their chances of evading pursuit by enlisting in their favor the national jealousies of the Rajpoot States, yet fortified by traditions of former ascendancy, they have never really succumbed to any Power, but hanging together as one man, have always united to repel the frequent futile attempts that have been made from time to time by the rulers of States individually to coerce any of their Meena subjects, so called. The aggregate of male adults in the tribe is about 24,000; of this number about 10,000, distributed in 200 villages, are located along these border tracts.

Individually, the men are brave to desperation, athletic and hardy, many of them tall with fine countenances, denoting their superior origin. Similarly as the Purihar has no resemblance to the Aboriginal Bheel, Mair, Kole, or low caste Meena of the Aravulla, so he has nothing in common with these races, but their lawlessnesses. He will neither eat, smoke, nor intermarry with them, that is to say, the Purihar will not give a daughter in marriage, though he will take to his bed as many daughters of inferior tribes as he can support. Their pride of birth indeed is excessive, fostered by traditions ascending beyond the bounds of history to the region of myth, till they arrive at the celestial origin of the Purihars on the occasion of the creation of the four warrior races on the holy Mount Aboo. The genealogist of the tribe is the honored guest in every village he visits in his annual round. Each family engages his company for one entire day, which is occupied in recording in the ponderous MS. volume the recent additions to the family tree whether in the male or female branch; for even the ancestry of the women is duly recorded. It is easy to understand the effect of this cherished pride of birth in supporting their indomitable spirit. About half the tribe are armed with matchlocks of a superior manufacture, about half with the bow, and all with the kattar, or double-hilted dagger, which is a weapon they peculiarly affect. It is never detached from their person for a moment, waking or sleeping. Free from the ordinary prejudices of caste, the Purihars are great eaters of meat which their cattle-lifting raids furnish in profusion, and drinkers of spirits which serve to increase their natural ferocity. All are married, and many besides, take in keeping the widows of their deceased clansmen to the number of two or three each, or otherwise domicile women forcibly abducted in their raids. Thus the villages have become greatly over-populated as regards the possibility of finding support from the village lands. Collectively, the most noteworthy circumstance perhaps relating to the tribe, was their utter ignorance up to the day of my arrival among them of the true character of the British Government as the paramount power. If any other proof of this were needed than that then so recently afforded by their having deliberately marked out the prosperous British district of Ajmeer as the field of their repeated inroads, it would be found in the record of their systematic obstruction to the officers of our Govern-

ment in the prosecution of their duty when it happened to lead them to the vicinity of the Meena villages.

Their raids into the British provinces brought matters to a crisis, and it was necessary to put them down. But in contrast with the unfortunate contests with savage races which are going on at the present day in other parts of the world, it may not be unworthy of note that the tranquillization of Jehazpoor was effected without a shot being fired.

LIBRARY.

The following additions have been made to the Library since the last meeting in August.

. Names of Donors in Capitals.

Presentations.

Proceedings of the Royal Society, Vol. XVII. No. 42.—THE ROYAL SOCIETY OF LONDON.

The Journal of the Chemical Society for April, May, and June, 1869.—THE CHEMICAL SOCIETY OF LONDON.

Proceedings of the Zoological Society of London, Part III. 1868.—THE ZOOLOGICAL SOCIETY OF LONDON.

Memoirs of the Manchester Literary and Philosophical Society, Vol. III., and Proceedings of the same, Vols. V, VI and VII.—THE MANCHESTER LITERARY PHILOSOPHICAL SOCIETY.

Records of the Geological Survey of India, Vol. II. part 3.—THE DIRECTOR OF THE GEOLOGICAL SURVEY OF INDIA.

Ramayana, Vol. I. part 7, Edited by Pandit Hemachandra.—THE EDITOR.

Professional Papers on Indian Engineering, by Lt.-Col. J. G. Medley, Vol. VI. No. 24.—THE EDITOR.

Discoveries in Science by a Medical Philosopher, by Sir G. D. Gibb.—THE AUTHOR.

Report on Jewellery and Precious Stones. N. S. MASKELYNE, ESQ.
Notes on the Murrhine Vases of the Ancients.—THE SAME.

Chronique de Michel le Grand, par V. Langlois.—J. AYDALL, ESQ.

Reports of the Meteorological Reporter to the Government of Bengal for 1868-69.—THE METEOROLOGICAL REPORTER.

Report on the Forest Administration in Oudh during 1867-68.—

THE GOVERNMENT OF INDIA.

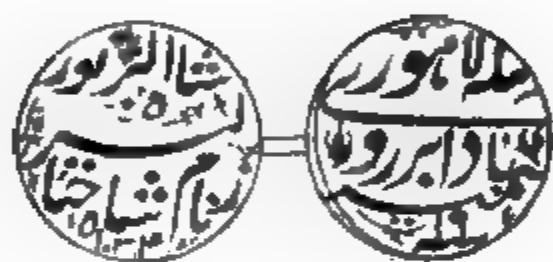
Report on the Forest Administration in Mysore during 1867-68.—

THE SAME.

Selections from the Records of Government, North-West. Provinces,
Vol. V.—THE GOVERNMENT NORTH-WESTERN PROVINCES.

Purchase.

The Ferns of British India, Part XXII.—Max Müller's Rig Veda Text
and Pratisakhya, Part IV.—Hewitson's Exotic Butterflies, part 70.—
Journal des Savants, Mai, 1869.—Comptes Rendus, Nos. 22, 23, 24.—
Revue des Deux Mondes, 15th Juin, 1st Juli, 1869.—The Anthropol-
ogical Review, No. 26.—Revue Archéologique, Juin, 1869.—The
Annals and Magazine of Natural History, No. 19.—Revue de Zoologie,
No. 5, 1869.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL

FOR OCTOBER, 1869.

A meeting of the Society was held on Wednesday, the 6th Instant,
at 9 o'clock, P. M.

The Hon'ble J. P. Norman, in the chair.

The minutes of the last meeting were read and confirmed.

Presentations were announced—

1. From Maulawí Agá Ahmad 'Alí, two copies of *Risálah i Tard-
nah*, and two copies of *Shamsher i Teztar*.

2. From Major F. W. Stubbs, Umritsir, Two silver coins of Ja-
hángír.

Mr. Blochmann said—

The two coins which Major Stubbs has presented to the Society,
are rupees struck by Jahángír (1605 to 1627). The coins are well
preserved and are of interest, because, as Major Stubbs observes in
his letter which accompanied the donation, they have not been de-
scribed by Marsden in his *Numismata Orientalia*. The inscription is

on Area I. ز نام شاه جهانگیر شاه اکبر نور

on Area II. همیشه بادا بر روی سکه لاهور

“Through the name of Sháh Jahángír, son of Sháh Akbar, light
May always be on the face of the coinage of Láhor.”

i. e., May the lustre of the name of Sháh Jahángír, son of Akbar Sháh,
for ever rest on the coinage of Láhor.

The second area also contains the year سنه ۱۰۹۹, the 19th year of his
reign, or 1034 A. H. (A. D. 1623). (*Vide* Plate VII.)

The inscription of the two areas forms a verse in the metre *Mujtass*, each area containing one hemistich.*

3. From J. C. Leupolt, Esq., C. S., Some earthen Medallions bearing inscriptions and a bronze figure of Buddha.

Mr. Leupolt forwarded the following Memo. :—

“Whilst in charge of Sub-Division Kasia in Gorák’hpúr District, I had the supervision of the excavations made on the part of Government at the Buddhist remains situated in and about Kasia village. It was only during the months of May and June and a part of July last, that I was able to carry on the work. A description of the ruins and remains, &c., can be found in General Cunningham’s Report of the Archeological Survey for the season of 1861-62, A. D., *paras.* 174, &c.

“The mound to the east is a large stufa. Into this I sank a well. The digging was rather difficult, as the labourers had to cut through layers of brickwork; between the bricks, which were very large, mud had been used instead of mortar. After digging some fifteen feet from the top, a small square aperture reaching to a level with the ground was found. I continued the excavations some twelve to fifteen feet lower, but was then compelled to desist as the rains had commenced, and there was some three to four feet of water in the hole. To have drawn off the water would have been of no use, as the daily rains would have again filled it up. In digging round about this mound, and in the mound itself between the interstices of the brickwork, a number of small baked earthen biscuit-like things were found, of which I forward a number; I have been unable to get any body to decipher what is printed on them.”

“Close to the mound was found a small bronze or brass image of Budh, I believe, which I forward also. At the ruins to the north not much work was done. The debris from one part of a circular stufa was removed, and the remains of walls some three feet in height with the floors of the rooms some five feet *underground* were discovered. These rooms are similar to those found at Saronáth near Benares, and appear to be portions of a monastery. As in the commencement of July I was removed from the ’Azíngarh District, I was

* The second hemistich has in the second foot three long syllables for an *ionicus a minori* (o o — —). Thus we have *haméshabá mafá’ilun* o — o —, *dá bar rú maf’úlun* — — —, *ya sikkáé mafá’ilun* o — o —, *láhúr fa’lán* — —.

unable to continue the excavations ; but I have no doubt that if the work is carefully and thoroughly done, it would result in some valuable archeological discovery being made.”—

The bricks are round and flat ; their diameter is about one and a half inches, and their thickness, about one-third of an inch. The rim is raised. They have the same Prakrit inscription throughout, and contain, it is supposed, formulæ of belief.

4. From Dr. Mohindra Lal Sirkar, a copy of ‘ The Calcutta Journal of Medicine, for May, June, 1869.’

5. From Nursing Rao, Esq., Vizagapatam, a copy of ‘ Meteorological Results from the Observatory at Vizagapatam, for the month of August, 1869.’

6. From the Government of India, A copy of ‘ Account of a singular accident which occurred at the Gun Foundry, Cossipur, during a thunder-storm on the 18th of August, 1869,’ when nineteen men were struck to the ground apparently by a violent concussion of the atmosphere occasioned by the close discharge of electric fluid. The following extract regarding this accident is taken from a letter by Col. H. Carleton, C. B., R. A., which accompanied the account.

“ The men were engaged in casting a large roller, and about two tons of the metal had been drawn off into the large ladle and were being brought round by the crane to the casting pit by eight men, four at each end holding the guides which, of course, are of iron. Six men were attending the crane which is constructed of both wood and iron, and is connected by iron stays with the iron roof of the building. There were three men with a small ladle of metal quite disconnected with those above-mentioned, and who were *all* connected, and two other men were moulding on the ground and disconnected. The overseer who felt no sensation, was astonished at seeing the workmen fall, and what is more remarkable, one man connected by both hands with those at the ladle who suffered so, but through the medium only of the molten metal, by means of a skimmer which is used to prevent the dross from following the metal, felt no sensation at all. The men at the crane were projected from it, fortunately, several feet, as the winches of course flew round at once, but struck no one, and the overseer had time to rush forward and key it just as the ladle touched the ground.”

“ It is most providential that the work was not a few seconds further

advanced ; for had the tilting of the ladle commenced, it must have fallen on its side, and in an instant the helpless creatures on the ground would have been in the midst of the metal. Nor could succour have reached them from without ; for it would have been impossible to drag them out without stepping into it."

"My principal object, however, in sending this report is to draw your attention to the position of the Foundry chimneys, which are all armed with lightning rods, and to show how little protection they may afford ; for it would have been thought that with these five conductors in such close proximity to the moulding shed, it were almost impossible for the latter to be struck. The course of the electric fluid appears to me to have been from the corrugated iron roof down the large crane which was being worked, and which is connected with the roof by several iron stays ; it must then have followed the course of the floor, however, to have affected the men in the south-east angle of the room, and made its exit in the direction of the south-east door-way near the small cupola."

"I have no doubt that the same cause to which the accident may be mainly attributed, was also that of the saving of life, viz. the large quantities of metal lying about both inside and outside, and principally the metal roof, which dissipated the electric charge rapidly in every direction ; but it is wonderful that the shock should have been received at all by this building in preference to the gun furnace chimney so close to it, and which cannot be less than eighty feet high and has a conductor."

"As the efficacy of lightning rods has been a good deal disputed by scientific men, every *fact* which can be brought to bear on the subject is valuable, and it might be assumed that it is to their peculiar construction, so little raised above the surface of the soil, that powder magazines owe their immunity from danger."

7. From the Government of Bombay, a copy of 'Report by H. J. Stokes, Esq., First Assistant Collector, Belgaum, on the preservation of the Canarese inscriptions in that district, and the advisability of printing Mr. Walter Elliott's collection of Canarese inscriptions, now deposited with the Royal Asiatic Society in London.'

8. From the same, a copy of 'Report on the Progress of the Ambernath Expedition.'

9. From the Under-Secretary, Government of India, Home Department, a copy of 'Report by Drs. Bühler and Kielhorn, of their Proceedings in searching for Sanscrit MSS. in the Bombay Presidency.'

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected Ordinary Members—

J. G. Delmerick, Esq.

A. D. B. Gomes, Esq.

R. Gray, Esq., M. B.

A. Thomson, Esq.

A. Allardyce, Esq.

The following gentlemen were named for ballot as Ordinary Members at the next meeting—

R. A. Barker, Esq., M. D. Civil Surgeon, Cachar, proposed by M. H. Ormsby, Esq., L.L. D., seconded by C. A. Hacket, Esq.

Lieut. W. J. A. Wallace, proposed by Col. H. Hyde, seconded by Dr. T. Oldham.

The Council reported that on the recommendation of the Finance Committee, they have increased the pay of the Cashier and Accountant from Rs. 25, to Rs. 32-8-0 *per mensem*. Confirmed.

The following papers were read—

L.—*A Covenant of 'Alí, fourth Caliph of Bagdad, granting certain immunities and privileges to the Armenian Nation, by J. AVDALL, Esq., M. A. S. (Abstract.)*

"This Covenant was written in Kufic characters by Háshim, at the command of 'Alí, the Lion of God, son of Abú Tálib, the exalted.

The Caliph 'Alí, who was the cousin and son-in-law of the prophet, bestows by this covenant certain immunities and privileges on the Armenians living in his dominions and professing allegiance to his government. These are a free and undisturbed exercise of the Christian religion, protection from oppression and persecution, exemption from the payment of new and exorbitant taxes, freedom from usurpation and alienation of their ancestral and hereditary property, a reciprocity of kindly and friendly feelings between the Armenians and Muhammadans in their social intercourse, and freedom from restraint in building churches and monasteries.

"This covenant, says 'Alí, is irrevocable and everlasting to the end of the world."

II.—*Notes on a Trip to the Nicobar and Andaman Islands, by V. BALL, Esq., B. A. Part I. THE NICOBARS. (Abstract.)*

The paper consists in journal form of the author's observations on the people, fauna, flora &c., of the Nicobars, during a stay at the new settlement of eight days. In several appendices, the Geology, Zoology, and Language, are treated more fully.

Having described the circumstances under which the islands have been taken over by Government, the previous settlements, and the piratical tendencies of the inhabitants, the author writes regarding the choice of the position of the new settlement—

“ If this selection has been made from strategical considerations, or for the purpose of putting a check upon the misdoings of the pirates of Trinkut and Nancowrey, none could have been better. But if the object in view be the formation of a self-supporting colony, it must be characterized as most unfortunate.”

The poor character of the soil and the unsuitability of the greater portion of it for cultivation, are at once made apparent by the large areas which, under the most favorable conditions of a tropical climate, are only able to support dry unnutritious grasses. The occurrence of jungle in certain places is explained in the geological Appendix.

Both Dr. Rink and Dr. Karl Scherzer, author of the ‘ Voyage of the Novara’, condemn the selection of this place by the Danes and others as a site for colonization.

In the southern islands of the group, the geological formation resembles that of the Andamans, and the soil is consequently much better, as is testified by the jungle which stretches uninterruptedly from hill top to high water mark.

The author visited several of the native villages and saw many of the men. In one or two cases, there were some women and children in the houses, but usually they were kept out of sight. Regarding the people he writes—“ Owing to the universal habit of pawn-chewing, their teeth are intensely black, those of the lower jaw often protruding in an irregular manner almost like tusks. The tongue, too, is more or less black from the same cause, and in the mouths of some, there appear to be horny lumps formed on the gums and underneath the tongue. They are broad-shouldered, stoutly built men.

In manner, they are absent and generally unemotional. They are excessively indolent, and since their daily wants are readily supplied, they spend the greater part of their time in sloth, doing nothing. As to their origin, there can be no doubt that they are Malays, possibly modified by a Burmese element, but they possess the characteristics both of face and manner which distinguish the former people."

Amongst the birds collected by the author, the most interesting was the mound maker, *Megapodius Nicobariensis*, Blyth, of which three specimens and two eggs were procured. An account of its habits and its measurements taken in the flesh are given in the Appendix on birds. Among the other birds obtained, several are peculiar to the Nicobars, and some have hitherto been found only in the Andamans and Nicobars.

The belief in the existence of wild buffaloes on Komorta is alluded to. The author could hear nothing definite from the natives on the subject, but anticipates that the fact, if it be one, cannot now long remain doubtful.

A visit to the Island of Trinkut is described where the party met with some Kling traders bartering with the natives for cocoanuts.

The Klings said that but for the settlement they would not dare thus to come on shore ; formerly, so far from going on shore, they were obliged to observe the precaution of preventing more than one canoe coming alongside their vessels lest the natives should swarm up the sides and overpower them.

The paper includes some general remarks on the people, chiefly gathered from the various published works on the Nicobars.

There are no chiefs, the old men are respected but do not exercise any particular influence in consequence of their age.

Certain of them called Minlovens perform the duties of priests, physicians and wizards. Their whole energy is concentrated on the exorcising of evil spirits. Their office is not a sinecure, as it is said that if a Minloven is unsuccessful in his cases, and several patients die while under treatment, the people agree to kill him, and he is treacherously murdered.

The principle of their religion as of that of many of the aboriginal races of India consists in the propitiation of evil spirits. According to the Missionaries they seem unable to form a conception of a Supreme beneficent Being.

Two traditions as to their origin according to Barbe, are current amongst them, these are quoted in the paper.

The author concludes his paper thus:—

“The recent opening of a direct line of communication with Komorta, has rendered a visit to the Nicobars a matter of no great difficulty or inconvenience; but in July when I went, the journey there and back involved six distinct transshipments. To any one for whom the subjects touched upon in the preceding pages possess an interest I can, with a lively recollection of the pleasure which I myself derived, warmly commend a trip to the Nicobars.”

The Appendices treat of certain subjects more fully than was possible in the Journal.

Appendix A. Geology.

The rocks of Komorta, Nancowrey, and Trinkut are magnesian claystones with occasional beds of conglomerates; igneous rocks too are present.

The Coal which has been found in the southern Islands, is evidently of similar character to that found in the Andamans which occurs there in nests and strings never forming a regular bed.

Traces of copper have been observed in the Gabbro rocks of Nancowrey.

Amber is said to occur, “but I have in vain sought for any authentic evidence of its having been found or seen with the natives.”

Appendix B.

1. *Mammals.* Very scarce, none were seen or collected by the author. 2. *Birds.* 22 species, (out of a total of about 45 which are all that have as yet been found in the Nicobars,) were either collected or observed. 3. *Reptiles.* None collected. Crocodiles though not mentioned in Mr. Blyth's list are known to occur. 4. *Fish.* A small collection of fish was made in Nancowrey haven. They have been examined and partly identified by Dr. Anderson. 5. *Mollusca.* The Mollusca are described in a note by Mr. G. Nevill.

Appendix C.

Language. This consists of a selection from various vocabularies of the Nicobar language which have been published from time to time, together with some comments thereon.

Appendix D.

Authorities. A list of the principal books and papers having reference to the Nicobars.

III.—*Note on some Agate Beads from North-Western India,*
by W. THEOBOLD, Esq., Jr.

The beads which are represented in the accompanying plate (*Plate VI.*) were obtained by me many years ago in the Benares district, and have lain by unnoticed till a short time since. Finding, however, during a late visit home, that no similar specimens exist, either in the rich stores of the British Museum or among the collections at South Kensington, and that no one to whom I showed them, had seen similar ones or knew anything of their history, I deem them sufficiently curious to bring before the notice of the Society. I procured them by purchase from mendicants and others who, in Hindustan, are in the habit of wearing beads of agate, glass, or other substances, and among a variety of other beads as a necklace, one or two or perhaps more of these would occur. The natives themselves do not seem to know much of their origin, beyond what is implied by the vague term *Sulaimání*, which they apply to all antique looking beads of agate or onyx, of which the brown onyx ones are best known and most valued. These brown ones, I may add, are called (as I am told) “3 cow-beads” in Abyssinia, where that is their current value.

The beads I am now describing are, however, of quite a distinct type from any of the ordinary ‘*Sulaimání*,’ and are recognized at a glance by being ornamented by a pattern seemingly traced on the surface, but really engraved and subsequently filled in with some pigment which adheres most intimately to the stone. In Multán or its neighbourhood, I believe, a recent imitation is still made by painting the required design on the surface with some pigment, having litharge as its base; but an examination of these antique bead stones shews, that whatever the material of the pigment may be, the pattern was first laboriously and often artistically sunk into the surface of the stone, so that a considerable amount of wear and abrasion has not always obliterated it. This is not obvious on all, but may be seen by closely examining some part of the impressed pattern, where a chip has been removed or where abrasion of the surface through wear has taken place. Many varieties will doubtless turn up when attention has been

directed to these articles, but the following are all that have occurred to me.

No. 1. Is a beautiful little cornelian bugle, displaying great care and finish in its execution, as do also Nos. 2, and 3, though not so fully.

Nos. 5, 6, 7. Are all bugles or beads of the same type of different sizes. Nos. 1. 2. 3. 5. and 6. are of red cornelian. No. 7. is of black onyx, with white lines.

No. 4, No. 8, No. 9, and No. 10, are all fusiform beads, varying in their proportion, but with the same general pattern, namely a zigzag line in the centre of the bead the angles of which are connected with straight lines at the end of the bead; these lines forming a double series of elongated pentagons. No. 10 is in red cornelian, No. 9 in grey agate, No. 4 in dark agate, while No. 8, is only an imitation glass bead, coarsely manufactured.

No. 11. Is a spherical bead of dark agate with strong well marked lines, exhibiting the same general pattern, forming a double row of five pentagons. There are two others of exactly the same form, but which are of inferior execution, all in dark agate.

No. 12. Is a round bead of pale red agate, the pattern is produced by two circles, encompassing the hole pierced in the bead; these circles are united by three equidistant right lines forming three septa, in the centre of each of which septa, a rudely marked circle is placed.

No. 13. Is a spherical bead of dark agate, with flattened ends, simply marked by two strong white circles.

No. 14. Is an imitation dark glass bead, marked with a very roughly and carelessly marked zigzag line in white.

No. 15. Is a bead of similar form, common white earthenware, with a very irregularly marked pattern in blue lines.

Nos. 16 and 17. A spherical bead, of agate, ornamented with six or seven circles of dots. There are four specimens, all rather roughly executed.

Nos. 18, 19, 20, & 21. Shew different forms of the same general design. These are all flat with rudely parallel sides. The patterns show an arrangement of circles or semicircles and dots, varying in some degree, in some quinary, in other shewing seven segments.

No. 21. Is a hemispherical bead of red agate, the raised side is ornamented by a circle of white enamel, the circumference of which is



1.



2.



3.



4.



5.



6.



7.



8.



9.



10.



11.



12.



13.



14.



15.



16.



17.



18.



19.



20.



22.



21.



connected across the centre by a strong line, and in either semicircle thus formed, there are two long dots.

Of the number here figured, Nos. 15., 14 and No. 8, two others similar in form and pattern to No. 11 (not figured), are all imitations formed in dark glass with white opaque glass markings.—

The others are all of true agate.

“ I trust some member of the Society will be able to throw a little light on the origin of these beads, which I presume are Bactrian,* and I will here merely add that among the articles found in one of the “Cromlechs” in the Nilghiris, “an engraved head” was recorded, which seems to have been lost or mislaid, as I failed to discover any traces of it in the Ootacamund Museum, where it was deposited, and I greatly suspect it was similar to those here described.—

Mr. Blochmann in continuance of his observations on Major Stubbs’ coin of Jahángir (p. 245), laid the following note on the table.

In turning over Marsden’s description of Jahángir’s coins (pp. 603 to 637), I found, to my astonishment, that the inscription of nearly every coin is metrical, and that also among the coins of Jahángir’s successors, there are some, the inscriptions of which have metre and rhyme. This is of great assistance in reading them; but Marsden does not appear to have observed this, and has proposed readings which, upon closer examination, are found to be at variance with his plates.

I shall now examine a few of Marsden’s readings from a *metrical* point of view.

1. *Marsden*, p. 607. Marsden reads—

قضا بر مسكه زر كرد تصوير شبه حضرت شاه جهانگیر

but we have to read شبیه *shabíh*, for his *shibh*, because the inscription is a verse in the *Hazaj i mahzúf*—shābīh e haz ۛ — — —, k̄tē shāhé ۛ — — —, jahángir ۛ — —.

* The word *Sulaimání* occurs frequently in the names of places in Badakhshán and the countries round about the *Takht i Sulaimán* mountain. *Sulaimán* is also a favorite name with Badakhshis.

Sulaimání means referring to *Sulaimán*, or *Solomon*., who figures in legends as the great wizard of the East. He is invoked as the great *Ustád* by saintly persons claiming miraculous powers.

It may be of interest to remark here that Prinsep in his “*Indian Antiquities*” (Mr. Thomas’ edition, Vol. I, pp. 82 to 85) has given, on Plate IV, No. 3, a drawing of a *Sulaimání* bead, “black and white enamelled,” exactly corresponding to Mr. Theobald’s pattern No. 4. Prinsep’s bead was found by

The reading of Area II. (p. 607), as given in Marsden, is correct, its metre is the *Mutaqárib i sálim*.

Hence also on p. 605, we may write *shabih* for Marsden's *shibh*, especially as *shibh*, in the sense of *shabih*, is rare. The above inscription is also interesting from a grammatical point of view, because the metre proves that *hazrat* takes the *Izáfat*.

2. *Marsden*, p. 619. One of Jahángír's zodiacal coins (*cancer*). Marsden sees neither metre, nor rhyme, and reads

داد زر را زیور جهانگیر شاه اکبر شهنشاه احمدآباد ۱۰۲۷

But from his plates, it is clear that we should read

زر احمدآباد را داد زیور جهانگیر شاه شهنشاه اکبر

which is a *Mutaqárib* verse, *zāré ah* U — —, *māḍibá* U — —, *dārādá* U — —, *dā zewar* U — —, &c. Marsden adds, "The title of *shahinsháh* 'rex regum,' given to the Emperor's father, had not before occurred." This is fully explained by the metre; for the words *Akbar Sháh*, which occur on other coins, will not suit the metre *Mutaqárib*, because they are a *molossus* — — —.

3. *Marsden*, pp. 622, 624, 625, 633. All these inscriptions are in the metre *Khafif*, with two long syllables in the last foot, viz., — U — — | U — U — | — —. On p. 624, Marsden translates wrong "Moneta (civitatis) *Agrah* dat auro decorem ex (mandato) Jahangír Shah, &c. *Az Jahángír*, however, does not mean *ex mandato J.*, but *nomine J.*, 'by means of J.'s name.'

4. *Marsden*, p. 634. His reading is correct; the metre is *Hazaj i Maqçúr* U — — —, U — — —, U — —.

5. *Marsden*, p. 635. A coin with Núr Jahán's name on it. Marsden and Thomas (Useful Tables, p. 49) read the first line—

بحکم جهانگیر شاه یافت صد زیور

But the inscription is a verse in the metre *Mujtass*, as on Major Stubbs' coin, and we have to put the word شاه before جهانگیر and read

بحکم شاه جهانگیر یافت صد زیور ز نام نور جهان پادشاه بیگم زر

'By order of Sháh Jahángír, (this) gold coin has received an hun-

Capt. Cautley together with several Hindu coins, &c., in the ancient ruins of Behat, near Sahárunpúr. As Prinsep shews that the coins refer to the first centuries of the Christian Era (p. 84), the bead would appear to enjoy a high antiquity. A similar bead was found in a Cromlech at Coorg. (Vide Dr. Oldham's paper in the Proceedings of the Society for September 1869.) THE SECRETARY.

dred ornaments through (i. e., by having on it) the name of Núr Jahán, the Queen Begum." Marsden, following Wilkins, translates *pádisháh begum* by *imperatoris consors*, the Emperor's Begum; but *pádisháh begum*, according to a rule observed in all Arian languages, is a *begum* who is a *pádisháh*, not for example, a *Nawáb Begum*, a *begum* who only has the title of *Nawáb*; hence we should translate *imperatrix*, *Queen Begum*.

6. *Marsden*, p. 645, l. 1. A coin of Sháh Jahán. Marsden reads—

سکه شاه جهان آباد رایج در جهان جاودان باد اسام ثانی صاحب قران

The second hemistich has neither sense, nor metre, nor orthography; for there is no form *اسام* which means *nomina*. Marsden's plate shews that we have to read the second hemistich

جاودان باد بنام نامی صاحب قران

and his translation, (*super*) *monetam (urbis) Shahjahanabad per mundum diffusam, aeterni sint nomina secundi domini conjunctionis*, ought to be corrected to *moneta (urbis) Shahjahanabad in aeternum sit diffusa per mundum, nomine augusto domini conjunctionis*, Sháh-jahán's title being *Qáhib qirán*, or *Dominus conjunctionis*.

The metre of the inscription is *Ramal*.

7. *Marsden*, p. 648. A silver coin of Aurangzeb. For Marsden's first line

سکه در جهان زد چو بدر منیر

we have to either to read with Thomas (U. T., p. 46), or put the fourth word second,

سکه زد در جهان چو بدر منیر

which is a hemistich in the *Khafif* metre.

So also in *Marsden*, p. 652, l. 7 from below.

8. *Marsden*, p. 651. Marsden says that the legend of this coin (a quarter rupee) is imperfect. The metre helps us to conjecture what the reading must be—

شاه اورنگ زیب عالمگیر سکه زد در جهان چو بدر منیر

—which is, as usual, a verse in *Khafif*.

Sháh Aurangzeb Alamgír

Struck coins in the world which are as (bright as) the full moon.

9. *Marsden*, p. 655, a gold coin of Muhammad A'zam Sháh.

Marsden reads—

سکه دولت و جاه پادشاه ممالك اعظم شاه

The last four words are a hemistich in *Khafif*, and *sháh* evidently rhymes with *jáh*. But for Marsden's *daulat*, his plate has clearly *ba daulat*; hence, assisted by the metre we conjecture that the correct reading is

سكه [زد در جهان] بدولت و جاه پادشاه ممالك اعظم شاه

"The Pádishah of the country, A'zam Sháh, strikes coins in power and dignity."

10. *Marsden*, pp. 658, 659. Two coins of Jahándár Sháh. The correct reading is—

در آفاق زد سكه بر مهر و ماه ابو الفتح غازي جهاندار شاه

—a verse in common Mutaqárib. *Vide* Thomas, Useful Tables, p. 47.

11. *Marsden*, p. 660. It is impossible from Marsden's plate to fix the correct reading, though there is no doubt that his reading is wrong. If the inscription is a verse, *zafar* ظفر must rhyme with *siyar* سير. But it looks as if the coin contained the word *'Azímábád* (Patna), not *'Azímushshán* عظيم الشان, the name of Farrukh Siyar's father.

12. *Marsden*, p. 661. A silver coin of Farrukh Siyar. Marsden reads (*vide* Useful Tables, p. 47.)—

از فضل حق سكه زد بر سيم و زر فرخ سيم پادشاه بحرو بر

But as the inscription is a verse in short *Ramal*, (— U — —, — U — —, — U — —) we have to transpose,

سكه زد از فضل حق بر سيم و زر پادشاه بحرو بر فرخ سيم

13. *Marsden*, p. 672. A gold coin of 'Alangir II. Marsden has omitted to give a facsimile of this coin; but his reading is palpably wrong; *vide* his correct reading on p. 675. Similarly four inscriptions enumerated in U. T. pp. 48, 49, as remarked by Mr. Thomas in the footnote.

It looks as if Akbar's coins are the first Indian coins that contain metrical inscriptions. I have not seen coins of Bábar and Humáyún with verses on them. For his large gold coins, or rather medals, Akbar ordered Shaikh Faizí, his court poet, to compose the quatrains which are given on p. 28 of my *Aín* translation; but the current coins of his reign contain no metrical readings. Jahángir, as we saw, had even verses put upon his rupees, and his coinage is thus distinguished from that of the preceding Moghul (Chagatái) emperors.

The coinage of the Çafawís of Persia also contains occasionally, as

far as I can judge from Marsden's plates, metrical inscriptions. His readings, however, are nearly all wrong. A few examples will suffice.

14. *Marsden*, p. 489. A silver coin of Sháh 'Abbás II(?). The first hemistich in Marsden has the metre *mafá'ilun* (3 times), *fa'úlun*. He reads—

بگيتی آنکه اکنون سکه زد صاحب قرانی
ز توفیق خدا کلب علی عباس ز نام ثانی

Marsden's facsimile does not clearly shew the words ز نام ثانی.

The metre of the first Hemistich, though not displeasing to the ear, is not Persian, and is not to be found in any treatise on Prosody; hence Marsden's first line cannot be correct. His second line has neither metre, nor sense, nor grammar: it looks as if Marsden's plate had ربانی *rabbání*, for which he read ز نام ثانی. Guided by a phrase below (No. 17), I propose to read Marsden's facsimile—

ز توفیق خدا کلب علی عباس ربانی بگيتی آنکه اکنون سکه زد صاحب قرانی

“By the grace of God, 'Alí's (unworthy) dog, 'Abbas the pious is the man who at present stamps the coin of Lordship in the world.” Thus we have at least grammar and metre (the dignified *Hazaj i sálím*, four times U — — —); but we sacrifice the rhyme, and use the word *rabbání* in a peculiar sense.

If *rabbání* should turn out to be the correct reading, the coin would belong to Sháh 'Abbás I., not Abbás II.

15. *Marsden*, p. 463. The first hemistich has no metre; the second is in *Ramal*.

16. *Marsden*, p. 465. For Marsden's رب المشرفین *rabbulmusharrafin*, read رب المشرقین *rabbul mashriqain*, the Lord of East and West, which must rhyme with حسین *Husain*.

17. *Marsden*, p. 469. A silver coin of Sháh Tahmásp II.

For Marsden reading, substitute

بگيتی سکه زد از توفیق حق طهماسب ثانی صاحب قرانی

—a short *Hazaj* (Masnawí) metre. Translate—

“Tahmásp II., by the grace of God,

Struck the coin of Lordship in the world.”

Qáhibqirání is an abstr. noun.

18. *Marsden*, p. 472. For سلطنت read سلطنت را, which Marsden's plate clearly shews. The metre is *Ramal*.

19. *Marsden*, pp. 478 and 480. Both inscriptions are correct, the former is in short *Ramal*, the latter is *Khafif*.

20. *Marsden*, p. 481. A gold coin of Ismá'il. The first line in Marsden has the metre *Muszári' i makfúf i maq,úr*—
(— — ∪, — ∪ — ∪, ∪ — — ∪, — ∪ —) ; but the second line is wrong, for it has no metre.

In several of the above examples, Marsden's plates confirm my conjectures ; in others, as in No. 15, better specimens of coins are required to prove or disprove the correctness of my emendations. To apply the rigid rules of Persian Prosody to inscriptions on coins, may be novel and unexpected ; but my preceding remarks will shew how necessary it is, even for numismaticians, to take care of the *Ars poetica*, when describing the coins of the Moghul Dynasty of India and the Çafawís of Persia."

The Meeting then broke up.

LIBRARY.

The following additions have been made to the Library since the last meeting.

. Names of Donors in Capitals.

Presentations.

The Journal of the Royal Geographical Society, Vol. 38.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

Bulletin de la Société de Géographie, Juin et Juillet, 1868. THE GEOGRAPHICAL SOCIETY OF PARIS.

Journal of the Geological Society of Ireland, Vol. II., part I.—THE ROYAL GEOLOGICAL SOCIETY, DUBLIN.

Thomason Civil Engineering College, Roorkee, Annual Examination, 1869. THE PRINCIPAL, THOMASON COLLEGE.

Quarterly Journal of the Geological Society, Vol. XXV., parts 1 and 2.—THE GEOLOGICAL SOCIETY OF LONDON.

Zeitschrift der Deutschen Morgenländischen Gesellschaft, Band XXIII. Heft I. and II.—THE EDITOR.

Proceedings of the Zoological Society of London, part I., 1869.—THE ZOOLOGICAL SOCIETY OF LONDON.

Journal Asiatique, No. 50, 1869.—THE ASIATIC SOCIETY OF PARIS.

Proceedings of the Royal Society, No. 113.—THE ROYAL SOCIETY OF LONDON.

Mas'údí, les Prairies d'Ore, texte Arabe et traduction, par G. B. de Meynard. Tome V.—THE AUTHOR.

Bijdragen tot de Taal-land-en Volken Kunde van Nederlandsch

Indie, 3rd Series, 3rd Vol., fasc. 3-4.—KONINKLIJK INSTITUUT VOOR DE TAAL-LAND-EN VOLKEN KUNDE VAN NEDERLANDSCH INDIE.

Die Zoophyten und Echinodermen des Adriatischen Meeres, von Prof. Heller.—THE AUTHOR.

Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien, Band XVIII.—THE IMPERIAL ACADEMY OF ZOOLOGY AND BOTANY, VIENNA.

On Some Elementary Principles in Animal Mechanics, by the Rev. S. Haughton, M. D.—THE AUTHOR.

On the Origin of a Cyclone by H. F. Blanford, F. G. S.—THE AUTHOR.

Notes on a visit to Somnath, Girnar, and other places in Kathiawar by J. Burgess.—THE AUTHOR.

Rámáyana, Vol. I., No. 8. Edited by Hema Chandra Bhattáchárya.—THE EDITOR.

The Flora Sylvetica, part I., by Major R. H. Beddome.—THE GOVERNMENT OF INDIA.

Icones Plantarum Indiæ Orientalis, part III., by Major R. H. Beddome.—THE SAME.

Annual Report of the Insane Asylums in Bengal for 1868.—THE GOVERNMENT OF BENGAL.

Die Vegetations Verhältnisse von Croatien, von Dr. A. Neilreich.—THE AUTHOR.

Purchase.

Reisen im Indischen Archipel, Singapore, Batavia, Manilla, und Japan, von Dr. A. Bastian, Band V.

Sanscrit Prosody, by C. P. Brown.

Revue des Deux Mondes, 1st August, 1869.

Revue Archéologique, Juillet, 1869.

The Ibis, for July, 1869.

The Annals and Magazine of Natural History, No. XX. 1869.

The L. E. and Dublin Philosophical Magazine, No. 253, 1869.

Grimm's Deutsches Wörterbuch, 4th Vol., 2nd Fasc.

Transactions of the Zoological Society of London, Vol. VI., Part 3.

Journal des Savans, Juillet, 1869.

Comptes Rendus, Nos. 1-4, 1869.

Exchange.

The Athenæum, July, 1869.





PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL

FOR DECEMBER, 1869.

The monthly meeting of the Society was held on Wednesday the 1st instant, at 9 P. M.

E. C. Bayley, Esq., C. S., in the chair.

The minutes of the last meeting* were read and confirmed.

The following presentations were announced—

1. From Bábu Udayachánda Datta, Civil Surgeon, Manbhúm—a copy of a grammar of the Sanscrit Language, by C. Wilkins, LL. D., F. R. S., 2nd edition, London, 1808.

2. From Professor S. T. Aufrecht,—a copy of a Catalogue of Sanskrit MSS. in the Library of the Cambridge University.

3. From J. E. Bruce, Esq.,—three specimens of *Eurinatorhynchus pygmaeus*, Linn., the small Spoon-bill, (in spirit), from Chittagong.

4. From Dr. Mohendralála Sarakára,—a copy of Calcutta Journal of Medicine, for November, 1869.

5. From Bábu Rájendralála Mitra,—seven maps of the Districts of Bengal, and two of Asiá and Europe in Bengali.

6. From Bábu Kisorichanda Mitra,—a copy of the “Life of Muttýlál Seal.”

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected ordinary members,—

R. A. Barker, Esq., M. D.,

Lient. W. J. A. Wallace.

* For October,—no meeting having been held in November, as there was no quorum.

The following are candidates for ballot at the next meeting,—

Allan C. Hume, Esq., Commissioner of Customs, Agra,—proposed by Dr. J. Anderson, seconded by Dr. J. Ewart.

J. Wood Mason, Esq.,—proposed by Dr. T. Oldham, seconded by Dr. F. Stoliczka.

Captain Alexander G. Ross, Staff Officer, Panjab Frontier Force; Abbotábád,—proposed by A. Cadell, Esq., seconded by Lieut. J. C. Ross, R. E.

The following gentlemen have intimated their desire to withdraw from the Society—

Dr. C. R. Francis and D. R. Onslow, Esq.; —the elections of W. Chisholm, Esq., and of R. H. Renny, Esq., have been cancelled at those gentlemen's own request.

The Council reported that they have sanctioned the appointment of a Maulavi, to check the Catalogue of Arabic and Persian MSS., for three months, at 30 Rs. per month; also that of a Pandit for the Sanscrit MSS., for some time, at the same monthly salary.

A letter from the Government of India forwarding—Copy of the Madras Government Resolution on the translation by the Rev. T. Foulkes of Sasanas—was laid on the table.

The following communications were brought before the meeting—

1. Note on an Extraordinary Flood in Upper Assam, by S. E. Peal, Esq. [*from a letter, dated Sapakattie, Sibsagur, September 21st, 1869*].

We have lately had most extraordinary floods in some parts of Upper Assam; especially in the basin of the Desang, and at a time that the neighbouring Dikho was all but dry.

On the 17th August, I started in a "Rob Roy" canoe from Sonarie on the Towkak, and I went down stream into the Desang, landing in six and a half hours at "Borboorwah Allee" Ghat, about 45 to 50 miles down. It was two or three days after the highest flood had fallen a little; and I noted that in the entire distance there was no land to be seen from the river that had not been under water and had some 2 inch of inundation mud on the top,—even the highest pieces.

When passing through Bokota Mouza the river seemed above the

Potar level, and in one place I found it was pouring over the bank with a fall of about a foot into rice land; all the rice in the Potar had been killed by the water flooding it some days before, and remaining on it.

On passing up the Deroi river, a tributary to the north side, I found the flood on that side quite as bad; and up to the Deroi factory, indeed, I only once caught sight of land at all; I subsequently went from Deroi factory up to the Sooloogoorie Allee Ghat by canoe with my brother, and we passed only three places out of water the whole way.

We looked for a place to land and have some breakfast, but could not even see a patch of mud, let alone land, and had to get into the branches of a large tree at last.

I may say also that rice for Deroi factory was being taken in large boats from Desang across country to Deroi, some miles.

The peculiarity of the case is, that these floods occurred in the Desang, at a time that the Dikho was nearly dry. Indeed to the people in Sibsagur it seemed incredible. Many Tea gardens will, however, suffer severely, I expect, as well as the ryots.

We have had it very hot now and then, which may account to some extent for the floods. On July 20th, a metal mounted thermometer placed in the sun and screened, registered at 1. 20 p. m. 174° Fah., the highest I have ever seen, but the great heat was only for some three days, and in-doors not excessive — 94° at 1 p. m.

2. *A new species of Pycnonotus*, by Dr. J. ANDERSON, F. L. S., and F. Z. S., Curator of the Indian Museum, Calcutta.

PYCNONOTUS XANTHORRHUS, *n. sp.*

Supra brunneus; pileo et regione oculari nigris; plumis auricularibus pallide brunneis; alis brunneis; flexura alarum rubro-flava; tectricibus sub-alaribus pallide ferrugineis; cauda nigro-brunnea; gula et abdomine medio albidis; pectore et abdominis lateribus brunneis; crisso flavo; rostro nigro; pedibus nigris.

Long. tota 7.70; alæ 3.65; caudæ 3.60, rostri a rictu, .77; a fronti .55; tarsi .70.

Hab. Manwyne, Yunán, ad alt. circa 1.700 pedes angl.

This species is nearly allied to *O. jocosa* in the general style of its

colouring, but differs from it in having a crest and its ear-coverts being pale brown. It has the square tail and the well developed rectal bristles of a *Pycnonotus*.

Held in certain lights, the under surface of the tail shews indistinct dark brown bars.

I observed this species only at Mauwyne, at the foot of the Sanda valley on the eastern side of the Kakhyen hills which separate Upper Burma from the Shan States, to the east of Bhamó.

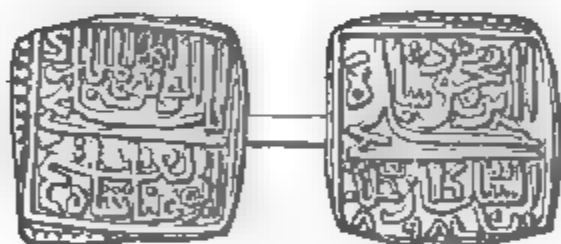
3. *A vocabulary on the Cashmere language*; by W. J. ELMSLIE, M. D.

4. *Translations from Chand*; by F. S. GROWER, Esq., M. A., B. C. S.

Both papers, the President stated, contain purely philological details; they will shortly be published in the forthcoming number of the Journal.

5. *Note on a Málwah Goldmuhur*; by H. BLOCHMANN, Esq., M. A.

The gold coin which I now exhibit was given to me by Dr. Hunter. I am not aware that the coin has been described. It is a square (*chahárgoshah*) muhur, and its weight, as determined by Col. H. Hyde, is 169.48 gra.



The inscription I read as follows—

Area I (left in the figure; the inscription commences in the upper left hand corner)—الملك الواثق الملتجي ابو الفتح عيات شاه

Area II.—بن محمود شاه الخالجي السلطان خلد [الله ملكه]

٨٩٨

The king who trusts (in God) and has recourse (to Him,) Abul Fath Ghiás Shah,

Son of Mahmúd Sháh Khiljî the Sultán,—May God perpetuate his reign. A. II., 898. [A. D. 1492-93.]

Málwah was independent for 133 years, from A. H. 804 to 937, when it was annexed to Gujrát. The line of the kings of Málwah is as follows—

1. Diláwar of Ghor, 804 to 808.
2. Hoshang, son of Diláwar, 808 to 838 (Zí Qa'dah).
3. Muhammad Sháh, son of Hoshang,* 838 to 839 (Shawwál.)
4. Mahmúd ibn i Malik Mughís i Khiljí (an Amír of Sultán Hoshang), 839 to† 873 (Zí Qa'dah).
5. Ghiásuddín, his son, 873† to 906 (9th Ramazán).
6. Náçiruddín 'Abdul Qádir,‡ his son, 906 to 916 (2nd Çafar).
7. Mahmúd his son, 916 to 937 (15th Sha'bán).

The goldmuhur therefore belongs to the fifth king. If the coin did not contain the year, and the word *Khiljí*, one might take it for a *Kulbargah* muhur; for among the Bahmans also there is a king Ghiásuddín, son of Mahmúd, who reigned for about two months.

The inscription on the coin presents an interesting feature. At the last meeting whilst exhibiting a Rupee struck by Jahángír, I drew the attention of the members to the curious fact that the legends on the coins of the Moghuls and those of the later Çafawís of Persia were for the most part metrical, a circumstance which, as far as is known to me, has not been observed on Muhammadan coins struck before the end of the tenth century of the Hijrah. The inscription on this Málwah goldmuhur, which belongs to the very end of the ninth century, stands intermediate between the metrical legends on modern coins and the prose inscriptions on the coins of earlier centuries, inasmuch as the legends of the two areas, though not metrical, have a rhyme (*almultají* and *Khiljí*).

Before the meeting broke up, the President Mr. E. C. Bayley, exhibited the copper-plate—an account of which was given in the Proceedings for May (p. 143) of the current year,—and gave several explanatory notes relating to the discovery of the plate and the inscription on the same, which will be published in the first number of the Journal for the next year.

* In Elphinstone's Hist. of India, (Fifth Edition, p. 768), 835?

† Elphinstone, 887? I do not know what sources Elphinstone used. The years, as given above, are taken from the Lucknow Edition of Firishtah, and agree with a historical MS. in my possession, entitled *Tabaqát us Saláftín*.

‡ Elphinstone calls him *Nasiruddín*. When kings have several names, the last name is the real name; hence this king should be called 'Abdul Qádir.

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The following additions have been made to the Library since the last meeting.

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Presentations.

Bulletin de la Société de Géographie, Aout et Septembre, 1869.—
THE GEOGRAPHICAL SOCIETY OF PARIS.

Proceedings of the Royal Geographical Society, Vol. XIII, Nos. 3, 4.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

Journal of the Agricultural and Horticultural Society of India, Vol. I, Part IV, New Series.—THE AGRIC. HORTIC. SOCIETY OF INDIA.

Pand Námah-i Adarrad Maraspand.—THE SOCIETY FOR MAKING RESEARCHES INTO THE ZOROASTRIAN RELIGION.

The Calcutta Journal of Medicine, Vol. II, No. 7.—THE EDITOR.

The lives of the Bengali Poets with selections from their works and Introductory brief History of Bengali Poetry, Part I; by Bábu Harimohana Mukerjea.—THE AUTHOR.

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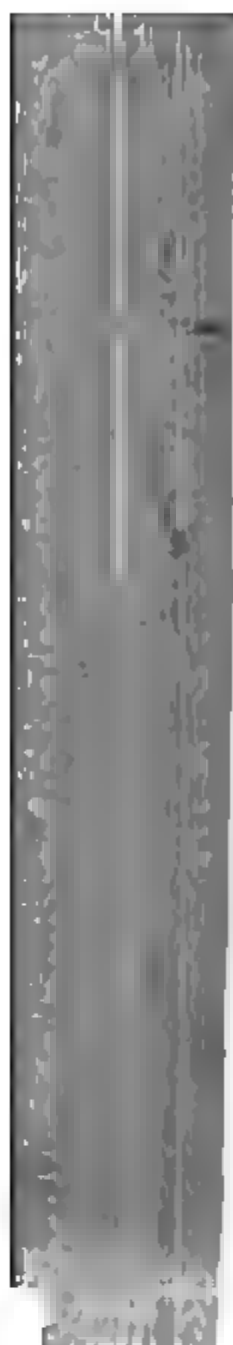
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Die Bhagavad-Gita, übersetzt und erläutert, von Dr. F. Lorinser.



APPENDICES.

Rig-Veda Sanhita, Vol. I, by Max Müller.

Revue Archeologique, No. 8, August 1869.

Revue et Magasin de Zoologie, No. 7, August 1869.

Comptes Rendus, Tom. LXIX, Nos. 5, 6; 1869.

Ditto ditto, ... Blochmann, H., Esq., M. A.	... Contribution to Indian Malacology, No. XI., Notes on the Arabic and Persian Editions of the Bibliotheca Indica.—No. 1, Ba- daoní and the Religious Views of Emperor Akbar,	25th June, 1869.	To be printed in Journal, Pt. II, No. 1, for 1870.
Ditto ditto, ...	... Note on the fall of a meteorite at Jullundur, in April, A. D., 1621, ..	1st April, 1869.	Printed in Journal, Pt. I, No. 3, 1869.
Ditto ditto, ...	... Contribution to the Chronology of the reigns of Tímúr and his descendants up to Shályahán, No. 1, ...	2nd June, 1869.	Ditto in Proceedings, for June, 1869.
Carlleyle, A. C. L., Esq. ...	... Description of two new species belonging to the Genera Varanus and Feranioides, res- pectively, from near Agra, ...	4th Augt., 1869.	Ditto ditto, for Augt., 1869.
Ditto ditto, ...	... Notes, Numismatical, Palæographical and Archæological, relating to India, ...	22nd Feb., 1869.	Ditto in Journal, Pt. II, No. 3, 1869.
Clay, W. M., Esq. ...	... India as described by Dionysius, the Geogra- pher, in his voyage round the World, ...	March, 1869.	Publication deferred.
Cole, R. A., Esq. ...	... Extracts from a report on Cromlechs in Southern India,	June, 1869.	Abstract (only), printed in Proceeding, July, 1869.
Cooper, T. T., Esq. Fryer, Capt. G. E. ...	... Notes on Western China, ... A contribution to our knowledge of Pelagic Mollusca, ... ..	.....	Printed in Proceedings, August, 1869.
Godwin-Austen, Capt. H. H.	... Notes on the Geology and Physical features of the Jaintia hills,	20th April, 1869.	Printed in Proceedings for May, 1869.
Ditto ditto, ...	... Notes from Assaloo, North Cachar, on the Great Earthquake of January 10th, 1869,	10th March.	Ditto in Journal, Pt. II, No. 4, 1869.
		16th Dec. 1868.*	Ditto ditto, Pt. II, No. 3, 1869. [March, 1869.
		25th Feb., 1869.	Ditto in Proceedings for

* Not acknowledged last year.

APPENDIX A.

List of papers submitted to the Society during the year 1869, with dates when they were received, and how they were disposed of.*

[* Short communications and abstracts of papers, chiefly printed in full in the Proceedings, are not included in this list, but referred to in the general Index.]

Authors.	Titles of papers.	When received.	How disposed.
Avdall, J., Esq. ...	A covenant of 'Ali fourth, Khalif of Bagdad, granting certain immunities and privileges to the Armenian nation, ...	23rd Sept., 1869.	To be printed in Journal, Pt. I.
Ball, V., Esq., B. A. ...	Notes on a trip to the Nicobar and Andaman Islands, Part I. The Nicobars, ...	8th Oct., 1869.	Under consideration.
Ditto, ditto, ...	On the ancient Copper Miners of Singhbhum, ...	2nd June, 1869.	Printed in Proceedings for June, 1869.
Bayley, E. C., Esq., C. S. ...	Notes on an Arian inscription, ...	April, 1869.	To be printed in Journal, Pt. I., for 1870.
Beames, J., Esq., C. S. ...	The Nineteenth Book of the Gestes of Pri-thiraj, by Chand Bardai: entitled the marriage with Padmawath, literally translated from the old Hindi, ...	July, 1869.	Printed in Journal, Pt. I, No. 3, 1869.
Blanford, W. T., Esq. ...	Contribution to Indian Malacology, No. X.,	13th Feb., 1869.	Ditto ditto Pt. II, No. 2, [1869.
Ditto ditto, ...	Ornithological notes, chiefly on some birds of Central, Western and Southern India,	3rd March, 1869.	Ditto ditto Pt. II, No. 3,

Nevill, Messrs. G. and H. ...	Descriptions of Marine Gastropoda from Ceylon, ...	3rd Feb., 1869.	Ditto in Journal, Pt. II, No. 8, 1869.
Oldham, T., Esq., L. L. D.	Notes on the remains found in a Cromlech at Coorg, ...	1st Sept., 1869.	Ditto in Proceedings for Sept., 1869.
Peal, S. E., Esq. ...	Short notes of a trip into the hills south of Sibsaugor, ...	Jan., 1869.	Abstract printed in Proceedings for March, 1869; printing of the paper in full deferred on account of the very numerous illustrations which cannot be executed at present.
Phayre, Col. Sir A., K. C. S. I. C. B.	The History of the Burmah Race, Pt. III,	2nd April, 1869.	Printed in Journal, Pt. I, No. 2, 1869.
Pratápachandra Ghosha, Bábu,	Notes of a translation of Balandshahar Inscription, ...	13th Mar., 1869.	Ditto ditto Pt. I., No. 1, 1869.
Rakáládása Háládár, Bábu, ...	Notes on a copper plate inscription in the possession of certain Kols, at Chota Nagpore, ...	July, 1869.	Ditto in Proceedings for August, 1869.
Showers, Lieut.-Col. C. L....	On the Meenas, a wild tribe of Central India,	2nd Sept., 1867, with additions up to Aug., 1869.	Ditto ditto for September, 1869.
Stoliczka, Dr. F. ...	Contributions towards the knowledge of Indian Arachnoidea, ...	7th April, 1869.	Printed in Journal, Pt. II, No. 4, 1869.

Authors.	Titles of Papers.	When received.	How disposed.
Surveyor General (through Bábu Gopinauth Sen), ...	Tabular statement of monthly rain fall from January, 1837 to November, 1868, monthly means of the principal meteorological elements and actual rain fall from 1856-1867; abstract of meteorological observations, taken at the Surveyor General's Office, Calcutta, from September, 1868 to October, 1869, ...	.....	Printed in Journal, Pt. II, No. 1-4.
Theobald, W., Jr., Esq., ...	Notes on the stone implements of Burmah, ...	June, 1869.	Printed in Proceedings for July, 1869.
Ditto ditto, ...	Notes on some Agate Beads from North-Western India, ...	Sept. 1869.	Ditto ditto, for Oct., 1869.
Tolbort, T. W. H., Esq., C. S.	The district of Lúdiána, ...	17th May, 1869.	Ditto in Journal, Pt. I, No. 2, 1869.
Waldie, D., Esq. ...	Analysis of the Khettree Meteorite with an account of its fall, ...	2nd June, 1869.	Ditto ditto, Pt. II, No. 4, 1869.
Williamson, Lieut., W. J.	A Vocabulary of the Garo and Konch Di-lects, ...	2nd April, 1869.	Ditto ditto, Pt. I, No. 1, 1869.

APPENDIX B.

Donations, (not including books, or other publications, and MSS., these being acknowledged in the monthly library lists.)

Donors.	Donations, those marked with an asterisk, were transferred to the Trustees of the Indian Museum.
J. E., Esq. ...	*Three specimens of <i>Eurhino-rhynchus pygmæus</i> , in spirit, from Chittagong.
d, H. A. ...	*Remnants of a human skeleton found while excavating a drain in Kyd Street, Calcutta.
her, M., Esq. ...	Two copper coins of Antoninus Pius and of Galba.
Capt., R. A., through the f Commissioner, Mysore, ...	*Four earthen pots, six beads and a ringlet found in a Cromlech in Coorg.
M. L., Esq., C. S. ...	Three ancient copper coins dug out in Roy Bareilly.
ment of India, Home De- ment, ...	24 Bronze Medals, executed at the Calcutta Mint.
litto, ...	A set of 20 photographs of the caves and temples of Nassick, taken by Mr. Sykes, Photographer, Bombay.
lt, J. C., Esq., C. S. ...	*Some earthen medallions bearing inscription, and a bronze figure of Budha.
vá, Krishná Setha, Bábu, ...	*Specimen of a <i>Fungus</i> from Calcutta.
Col., R. E. ...	*A box of flint implements from Jubbulpore.
n, W., Esq., L.L. D. ...	Specimens of bricks, bearing inscription found at Musar, near Arrah.
dra Lála Mitra, Bábu, ...	*Shells collected on the sea-shore, near Puri.
7, W. M., Esq. ...	*Specimens of Corals from the Andaman Islands.
3, Major, F. W. ...	Two silver coins of Jahángir.
átha Basu, Bábu, ...	A Mahomedan copper coin.

INDEX.

	<i>Page</i>
'Abduçcamad, ...	90
Abhidána Chudámaní, ...	125
Abubakr Mirza, ...	209, 210
Abul Fazl, ...	87
Abyssinia, expedition to ...	40
Acacia Arabica, ...	119
----- Catechu, ...	119
----- leucophloea, ...	119
Acavus, ...	67
Accident during a thunder-storm at Cossipur, ...	247
Accounts for 1868, abstract of ...	xvii.
Account of an Analysis and fall of the Khettree Meteorite, by D. Waldie, ...	169
Account of a Meteor at Cooch Behar, April 30th, 1869, ...	169
Addition to the Library, <i>vide</i> Library.	
Address of the President, ..	13
Adley, C. C., election of ...	47
Agate beads, ...	253
Agabeg, J., resignation of ...	108
Ahmad Mirza, ..	210
Akbar's Religious views, ...	80
Akbar, Religion of ..	81 ff.
Alangar Mirza, ...	209
Alexander, N. S., resignation of ...	225
'Ali, covenant of ..	249
Allardyce, A., election of ...	249
Andaman Islands, Notes on ...	250
Anderson, A., resignation of ...	61
-----, Dr. J., on Cooper's travels, ...	155

	<i>Page</i>
son, Dr. J., on <i>Pycnonotus xanthorheus</i> ,	265
l Report,	1
nus Pius, coin of	162
pes,	158
Inscription,	143
, J. P., election of	60
i Mirza,	212
to Hookoong, Route from	67
Topographical feature,	165
, notes from—on the earthquake of January 10th, 1869,	91
rs of the accounts of the Society	9
, W. A. D., resignation of	200
covenant of 'Ali,	249
aph of Sháh Jahán,	190
aph of Jahángír,	190
iscontinued,	87
Khán,	90
i and the religious views of Akbar,	80
shahar Inscription,	115
., on the ancient copper miners of Singhbhúm,	170
otes on the Nicobar and Andaman Islands,	251
ie, W. C., election of	162
a, Visit to	77
R. A., election of	263
J., resignation of	178
3,	153
J. B., On Fryer's Pelagic Mollusca,	165
, election of	60
E. C., Note on an Inscription,	143
——, Notes on a Coin,	201
J., translations from Chand,	126, 255
— Translation of Nineteenth Book of the Gestes of	
raj, by Chand Bardai,	235
P. F., election of	47
Expedition to	38
at (a famine food),	120

	<i>Page</i>
Bholanatha Chandra, resignation of	178
Bibliotheca Indica, Report on	6
Bir Bar,	90
Blanford, H. F., on the Cachar earthquake, January 10th, 1869,	103
———, W. T., on flint implements from Jubbulpore, ...	53
———, on Indian Malacology, X,	65
———, Birds of Central India &c.,	104
Blochmann H., Badaoni and the Religious views of Akbar, ...	80
———, Note on the fall of a meteorite at Jullunder in April	
A. D. 1621, according to the Iqbalnamah i Jahangiri, ...	167
———, Bibliotheca Indica (publication),	6, 126
———, on Tolbort's 'District of Ludhiyana,'	166
———, on a Persian MS.,	190
———, Chronology of the reigns of the Timurides,	207
———, on two Silver Coins of Jahángír,	245, 255
———, Observations on Metrical Inscriptions found on	
Indian and Persian Coins,	255
———, on a Málwah Goldmuhur,	266
Bonavia, E., resignation of	178
Bronze Axe, found in Cromlechs,	60
Broont, (a famine food),	120
Buddhist Medallions,	246
Budget estimate, for the year,	5
Bunnoo, Deputy Commissioner's letter,	163
Burma race, (History of)	115
Burma, stone implements,	181
Burmese route from Assam to Hookoong,	67
Cachar Earthquake, Photographs of	113
Cadell, A., election of	47
Cunningham, Genl. A., elected Honorary Member,	2
<i>Capparis aphylla,</i>	119
Carlleyle's, New Reptiles,	105
Carlleyle's, Numismatical notes, &c.,	108
Carpoghaga,	104
Cashmir, Architectural remains of temples in	43
Ceylon Marine shells	63

	<i>Page</i>
Chand, translations from	235
Chentu, the highway to Thibet,	152
Chisholm, W., resignation of	264
Chronology of the Timurides,	207
Chung Ching,	146
Clay, on India as described by Dionysius,	178
Cline, G. W., resignation of	178
Coates, J., election of	177
Coin Cabinet,	6
— of an Ortokite,	201
— of Jahángir,	255
— of Ghiás Sháh of Málwah,	266
Cole, Capt., R. A., Extract from a Report on Cromlechs in Southern India,	202
—, on Cromlechs,	54
Committees, Appointment of	61
Contribution towards the knowledge of Indian Arachnoidea, by Dr. F. Stoliczka,	157
Contribution to the knowledge of Pelagic Mollusca, by Capt. G. E. Fryer,	164
Cooper, T. T., Notes on Western China,	143
Coorg, Cromlechs in,	59, 226
Copper miners of Singhbhúm,	170
Covenant of 'Ali,	249
Cremnoconchus Syhadrensis, new Species of	187
Cromlech, Measurement of, &c.	54, 202
Cyclophoridæ, New Species of	65, 165
Cyclostoma, New Species of	187
Day, F., election of,	108
Delmerick, J. G., election of	249
Description of Marine shells from Ceylon, by Messrs. G. and H. Nevill,	63
Digámvara Mitra, resignation of	225
Dionysius, India as described by	178
Diplommatina,	64-65
Ditropis,	65

Diyung river, ...	...	...	...	95
Dolomedes longimanus, ...	...	...	...	159
Dremotherium, ...	...	...	...	41
Drew, F., election of, ...	...	...	..	60
Effects of earthquake at Bunnoo, ...	...	...	...	163
Egerton, R. E., Note regarding on earthquake in Murwat, ...	...	...	...	163
Elmslie, W. T., vocabulary on Cashmere language, ...	...	...	...	260
Emys (Pangshura) tectum, ...	...	...	...	40
Ennea, Description of ...	...	...	...	65
Epeira stellata, ...	...	...	...	159
——-- Braminica, ...	...	...	...	159
——-- mammillaris, ...	...	...	...	159
——-- hirsutula, ...	...	...	...	159
Erithrosterina, ...	...	...	...	164
Extract from a Report by Capt. R. A. Cole, on Cromlechs in Southern India, ...	...	...	...	220
Faizí, ...	...	...	...	90
Famine food of Marwár, ...	...	...	...	116
Faucaux, Mr. F. S., elected Corresponding Member, ...	...	...	...	2
Fauna of Ceylon, Addition to ...	...	...	...	63
Ferrar, M. L., election of ...	...	...	...	108
Finance, ...	...	...	...	4 & 5
Fisher, J. H., election of ...	...	...	..	228
Flint implements from Jubbulpur, ...	...	...	...	51
Flood in Assam, ...	...	...	...	264
Francis, C. R., Dr., resignation of ...	...	...	...	264
Fraserpett, Cromlechs at ...	...	...	...	56
Fryer, Capt. G. E., Contribution to our knowledge of Pelagic Mollusca, ...	...	...	...	164
———, election of ...	...	...	...	225
Gabb, on the Amazon valley, ...	...	...	...	165
Gubboy, R. A., election of ...	...	...	...	125
Gagrella signata, ...	...	...	...	158
——— atrata, ...	...	...	...	158
Galba, Coin of ...	...	...	...	162
Galeodes orientalis, ...	...	...	..	158

	<i>Page</i>
Gastracantha Canningensis, ...	158
Geology of the Jaintia Hills, ...	64
Gestes of Prithraj, ...	235
Ghiásuddín Jahángír, ...	209
Godwin-Austen (Capt.), Geology of the Jaintia Hills, ...	64
————— Notes on Cachar Earthquake, ...	91
————— on Diplommatainæ, ...	186
Gokhur Kantee, ...	120
Gomes, A. D. B., election of ...	249
Gordon, R., election of ...	177
Gordon, Major T. E., Translation of Umar i Khayyám in the Bibliotheca Indica, ...	226
Gray, R., election of ...	249
Grivna, weight of a ...	188
Growse, F. S., Further Notes on Chand's poems, ...	79
————— translations from Chand, ...	266
Grote, A., elected Honorary Member, ...	2
Hæberlin, C., election of ...	108
Halдар, Babu Rakháldása, Nagpúr inscription, ...	203
Harris, A. B., resignation of ...	178
Hankow, ...	146
Hasan and Husain, twin sons of Akbar, ...	214
Hakím 'Abul Fath, ...	83, 190
Haughton, Col., account of a Meteor in Cooch Behar, April 30th, ...	1869, 169
Haughton, Col., on Singbhúm, ...	171
—————, on Mr. Clay's Dionysius voyage, ...	178
Haurang, ...	146
Helicidæ, ...	187
Hennessy, J. B. N., resignation of ...	200.
Hersilia Calcuttensis, ...	159
Hindal Mirza, ...	212
Hobhouse, C. P., resignation of ...	48
Holmboe, Professor, elected Corresponding Member, ...	2
—————, letter from ...	188
Hookoong valley, ...	67, 70

				<i>Page</i>
Hoopeh,	...	...	..	147
Hopkins, H., resignation of	...	...	...	75
Hyænodon,	...	...	...	41
Hyde, E., election of	...	...	..	225
Hyde, H., Col., Financial Secretary,	...	...	...	225
Ijil Mirza,	...	...	...	209
Imam Mahdi, appearance of	...	...	...	84
India, as described by Dionysius,	...	...	...	178
India, Birds of Central and Western—	...	...	...	104
Indian Arachnoidea,	...	...	...	157
Indian Malacology, No. X, Contributions to	...	...	...	65
Indian Mollusca, by Godwin-Austen,	...	...	..	186
Inscription, Arian,	...	...	...	143
————— of Bálandshahar,	...	...	...	115
————— at Nagpúr,	...	...	...	203
Ja'far Beg Áḡaf Khán,	...	...	...	90
Jahángír,	...	...	91,	1167
Jalál-uddín Mírán Sháh Mírzá,	..	...	...	209
Jaláluddín Muhammed Akbar,	...	...	...	214
Jahángír, Autograph of	...	...	...	191
—————, coin of	...	...	...	245
Jaintia Hills, Geology of the	...	...	...	64
Jenkins, Route from Assam to Hookeong valley,	...	...	...	67
Journal of the Society,	...	...	...	1
Jubbulpur Flints,	...	...	...	57
Juddulal Mullick, election of	...	...	...	125
Jullunder Meteorite,	...	...	...	167
Kabir-uddin Ahmad, election of	...	...	...	108
Kahgunah hill,	...	...	...	97
Kámrán Mirzá,	...	...	...	212
Kár Sultán Begum,	...	...	...	211
Kedarnath Banerjee, resignation of	...	...	...	108
Kejra (a famine food),	...	...	...	120
Khanzadah Begum,	...	...	...	211
Khettree Meteorite,	...	...	...	169
Khiradnámah i Iskandarí,...	...	...	...	190

	<i>Page</i>
Liáng,...	144
Notes on the Famine food of Marwár,	116
..	67
election of	125
L., election of	225
Liáng, ...	145
J., election of	125
M., on the Cachar earthquake of Jan. 10th, 1869,	102
arding an Earthquake in Murwat,...	163
., election of	162
Remarks on earthen Medallions found in the Goruck-	
trict, ...	246
Report on, ...	6
Additions to, 48, 74, 105, 122, 159, 176, 192, 221, 242,	260
, Accident, ...	247
, E. D., election of	108
...	144
ing, ...	77
i (District,) by T. W. H. Tolbort, Esq., C. S.,	166
P. S., resignation of	126
J., election of	177
, A., resignation of	178
Peak, ...	96-98
id Khalíl,	209
Mirza, ...	210
...	121
y, Contributions to Indian	65
old Mohur and Málwah kings,	266
historic remains of, near Rewah, ...	108
a mane, or Cromlech, ...	58
Earthquake at	102
ots (Sanskrit),	134
iei Peak, ...	94
A. M., election of	177
., resignation of	126
famine food),	116

	<i>Page</i>
Mayo, H. Esq., Lord, Patron of the Society, ...	61, 75
Medallions, Buddhist	246
Medlicott, Moraines near Tezpore,	165
Meenas, a wild tribe of Central India, by Lieut.-Col. C. S. ...	
Showers,	238
Meeting, Annual,	1
Meeting, Ordinary Monthly, 47, 51, 75, 107, 125, 161, 177, ...	199, 223, 245
Mihr Banu Begum,	211
Meta gracilis,	158
Meredith, J., Notes on the topographical features of Assam, ...	
and their indications,	165
Mifoo,	147
Min river,	144
Mirza, 'Umar,	209
Mirza Yadgar Naçir,	211
Mahabhashya publication, ..	130
Momcin,	156
Mooroong, description of	77
Motacilla,	105
Mothee,	120
Muir, W. F. W., resignation of	162
Murad Mirza,	210
Naçir-uddin Muhammad Humayun,	212, 213
Nagpûr inscription,	203
Namroop,	69
Namphook, a village,	68
Naçir Mirza,	211
Nevill, Messrs. G. and H., Description of marine shells from ...	
Ceylon,	63
New data regarding the death of A. von Schlagintweit, ...	161
Newall, Lieut.-Col. D. J. F., Notes on the Temple of Razdan ...	
in the Lar Pergunnah,	178
Nicobar Islands,	250
Nirghanta Râja,	125
Notes of a translation of Balandshahar Inscription, by Bábu ...	
Pratapachandra Ghosha, B. A.,	115

	<i>Page</i>
Notes (further) on Chand's poem, by F. S. Growse, Esq., ...	79
—— on Western China, by T. T. Cooper, Esq., ...	143
—— (short) of a trip into the hill south of Sibsagur by S. E. Peal, Esq., ...	76
—— on the Famine food of Marwár, by George King, Esq.,...	116
—— on the temple of Razdan in the Lar Pergunnah, Cashmir, by Lieut.-Col. D. J. F. Newall, ...	178
—— on the topographical features of Assam and their indications, by J. Meredith, Esq., M. D., ...	165
—— on the fall of a meteorite at Jullunder in April A. D. 1821, according to the Iqbalnamah i Jahangírí, by H. Blochmann, ...	167
—— on the Cachar Earthquake, ...	91
—— on some Agate Beads from North Western India, by W. Theobold, ...	253
—— on the stone implements of Burmah, by W. Theobold, ..	181
—— regarding an Earthquake, by R. E. Egerton, ...	163
—— on an Arian Inscription, by E. C. Bayley, Esq. ...	143
Newal, D. J. F., election of ...	125
Nephila angustata, ...	158
Nevill, G., election of ...	125
——, member of Committee, ...	225
Nicobars, notes on a trip to the ...	250
Nirghantá Rája, ...	125
Nursing Rao, A. V., election of ...	177
Nunkee, ...	69
Nuruddin Muhammad Jahangir, ...	216
Oakes, flint implements from Jubbulpore, ...	51
Obituary notes of members of the Society, ...	2
Officers of the Society, election of ...	12, 108, 225
Officers' pay, increase of ...	249
Oldham, Dr. T., on Mr. Jenkins' note on the Burmese route &c. &c., ...	67, 73
——, on the Jullunder Meteorite, ...	168
——, on maps of the Sundarban, ...	219
——, on Coorg Cromlechs, ...	226
——, on the Cachar Earthquake, ...	115

	<i>Page</i>
Oldham, W., election of ...	125
Onslow, D. R., resignation of ...	264
On the Ancient Copper Miners of Singbhúm, by V. Ball, ...	170
Opium in China, ...	151
Opisthostoma, Indian Species of ...	67
Ornithological notes, by W. T. Blanford, ...	104
Ortokitean, Coin of ...	201
Padri Radalf, ..	81
Paludomus, new species of ...	187
Panduporre, or Cromlechs,...	58
Patron of the Society, ...	61, 75
Payayaralna Viálá, ..	125
Peal, S. E., Notes of a trip into the Hills South of Seeksagur,...	76
——, on extraordinary flood in Assam, ...	164
Pearse, on pre-historic remains near Rewah, ...	108
Pelagic Mollusca,..	164
Pell, S., election of ...	177
Perkins, H., resignation of ..	126
Pratapachandra Ghosha, Notes of a translation of Balandshahar Inscription, ...	115
—————, election of ...	61
Phayre, Col. Sir, A. The History of the Burmah race, Pt. III.	115
Physical features of the Jaintia Hills, ...	64
Pickford, J., election of ...	60
Porzana,	105
Pre-historic remains near Rewah, ...	108
President's Address, ...	13
Price of Proceedings, raised, ...	200
Prince Jahán Sadr Mirza Muhamed Wahid Ali Bahádur, elec- tion of ...	199
Prithiraj, ...	255
Proceedings of the Society, notes of subscription to the ...	200
Pullan, A., resignation of ...	108
Pycnonotus, New Species of ...	265
Qutbuddin Amír Timur, ...	209
Rainey, H. J. Notes on maps of the Sundarbans ...	219
Renny, R. H. election of, cancelled, ...	264

	<i>Page</i>
airghanta, ...	125
Adra Lāla Mitra, on publication of Sanscrit MSS.,	127
—, on Prof. Holmboe's letter,	188
aldasa Haldār, notes on a copper plate inscription,	203
awann Kunné, Cromlechs at	56
in, F. W., election of	162
an temple,	178
rah Sultan Begum,	211
les, Description of New Species of	105
rts, The Hon. A. A., obituary notice of	2
J. C., election of	177
W. A., election of	60
iyat i Omar Khayyam, Publication sanctioned,	61
of the Society discussed,	10 <i>et seq.</i>
l, A. E., resignation of	162
of Government Securities,	126
l, ...	214
dora persica,...	119
rit MS.,	134
, Kapedéva, elected Honorary Member,	2
gintweit, H. Note regarding the date of A. v. Schlagin-	
ait's death, ...	161
eder, S., election of	162
des propinqua,	159
h enforced,	85
ch, S. W., election of	199
nun orientale,	121
abuddin Muhammad Shah Jahán,	219
Jahán, autograph of	191
rukhs Mirza,	209
h Mubarik, ...	83
ghai,	145
aisip peak, ...	94
ers, Lieut.-Col. on the Meenas, a wild tribe of Central	
lia, ...	238
gur, Hill tribes of	74
—, short notes on &c. &c., by S. E. Peal,	76

	<i>Page</i>
Singbhúm, copper miners of	170
Singoes, the description of	70
Sirdár Attar Singh, election of	60
Sivaism in Europe,	188
Sommarpett, Cromlechs near	56
Spiraculum, New species of	66
Sphasús viridanus,	159
—— similaris,	159
Stöhr, on Singbhúm,	171
Stoliczka, F., Contributions towards the knowledge of Indian	
Arachnoidea,	157
——, respiratory organs of Mollusca,	187
——, on Mr. Peal's short notes, &c.,	76
——, on Messrs. G. and H. Nevill's, marine shells, &c.,	63
——, on Capt. Godwin Austen's notes on the Jaintea	
Hills and on fossils from Assam,	64, 65
——, on the Cachar Earthquake of Jan. 10th, 1869,	108
——, on Capt. Fryer's Pelagic Mollusca,	164
——, on the Amazon valley,	165
——, on Godwin Austen's Indian Mollusca,	186
——, on Mr. Blanford's Contribution to Indian Malaco-	
logy, XI,	187
Stone Implements of Burma,	181
Strachey, J., election of	61
——, R. Col., on a bronze axe,	60
——, on lightning,	74
Streptaxis, Description of	65
Stubbs, two silver coins of Jahangir,	245
Sunderban, Notes on	219
——, Map of	921
Sultan Abú Saíd Mírzá,	210
Sultán Muhammad Mírzá,	209
Sultán Murád,	215
Tabaqat i Akbari,	207
Table exhibiting the shocks of Earthquake at Cachar on 10th	
January, 1869,	100
Tanalia,	67

Tarikh Firoz Shahi, MS. of	...	...	...	225
Tuzuk i Jahangiri,	...	...	...	168
Telyphonus Assamensis, ..	...	...	...	158
Tetragnatha iridescens,	...	...	...	158
Thakura, Prasanna Cumara, C. S. I., obituary notice of	...	...	...	230
———, Giriprasáda Sing,	...	...	...	61
Theobald, W., Notes on the Stone Implements of Burmah,	...	...	...	181
———, some Agate Beads from North-Western India,	...	...	...	253
Thomas, T., election of	...	...	...	60
Thomisus elongatus,	...	...	...	158
——— Pealianus,	...	...	...	158
——— pugilis,	..	..	...	158
Thompson, Dr. F., elected Honorary member,	...	...	...	2
———, A., election of	...	...	...	249
Thuillier, Col. ..	...	...	...	155
Tickel, on Singbhúm,	...	...	...	174
Tilli,	...	..	...	121
Timurides, their Chronology,	...	...	...	207
Tolbort, T. W. H., on the Ludhyanah District,	...	...	...	166
Udaya chanda Datta, election of	...	...	...	162
Ulugh Beg Mirza,	...	...	...	210
'Umar Shaikh Mirza,	...	...	...	209
Usman Chalbi,	...	...	...	209
Ustad Dáúd,	...	...	..	167
Vedanta Sutra, the publication of English translation, sanc-				
tioned,	...	...	...	61
Virajpett, Cromlechs at	...	...	...	58
Walad Mirza,	...	...	...	210
Waldie, D., Analysis of the Khettree Meteorite with an account				
of its fall,	...	...	...	169
Wallace, W. J. A., election of	...	...	...	263
Westland, J., election of,	...	...	...	225
Western China,	...	...	...	143
Wilson's, (Dr.), Address on the prospect of Indian research,	...	...	...	100
Yangtze Kiang,	...	...	...	144, 145
Zahiruddin Babar,	...	...	...	211, 212
Zizyphus,	...	...	...	119



ERRATA IN THE PROCEEDINGS FOR 1869.

<i>Page</i>	<i>line</i>	<i>for</i>	<i>read.</i>
60	34	"Sirdár Atlar"	Sirdár Attar
61	11-12	"'Owar Khoyyam"	'Omar Khayyám
68 & 67.	12-13 (et seq.)	"A. C. Peal"	S. E. Peal
74 (et seq.)	17 (et seq.)	"Peel"	Peal
	pp. 76, 78, 79, &c.		
75	18	"Haberlin"	Hæberlin
88	19	"Sixth"	Fifth
90	5	"nám tu"	nám i tu
105 (et seq.)	10 (et seq.)	"A. E. Carlleyl"	A. C. L. Carlleyle
	p. 133, &c.		
108	24	"Gubbay"	Gubboy
112	34	"Páre"	Pau
121	30	"Frayer"	Fryer
126	6	"T. W. Rawlin"	T. W. Rawlins
127	8	"Rámahmaya"	Rámamaya
128	7 & 9	"Yajurs"	Yajus
	27	"Bráhmya"	Bráhma
129	8	"codices of two or three commen- taries"	two or three codices of the commen- taries
"	16	"between"	of between
"	18	"Dupetron"	Duperron
133	8	"the initial line"	initial lines
134	5	"there"	their
"	30	"नान्विब"	बान्विब
"	34	"वैदिक"	वैदिक
136	8 & 15	"धर्मशास्त्र"	धर्मशास्त्र
"	19	"बोधायनधर्मशास्त्र"	बोधायनधर्मशास्त्र
143	5 & 20 & last.	"धर्मशास्त्र"	धर्मशास्त्र
162	15	"F. W. Rawlin"	T. W. Rawlins
175	33	"A. L. Clay"	W. M. Clay
177	28	"A. C. Cameron"	A. M. Cameron
215	17	"a wife"	a daughter
217	9-10	"and to a daughter of Muzaffar Hu- sain (Tuzuk p. 76)"	omit.
219	21	"Raushan Rái"	Raushan Arái.

APPENDIX.

LIST OF MEMBERS

OF THE

ASIATIC SOCIETY OF BENGAL,

ON THE 31ST DECEMBER, 1868.

LIST OF ORDINARY MEMBERS.

The * distinguishes Non-Subscribing, and the † Non-Resident Members.

N. B.—Gentlemen who may have changed their residence, since this list was drawn up, are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alterations may be made in the subsequent edition.

Gentlemen who are proceeding to Europe, with the intention of not returning to India, are particularly requested to notify to the *Secretaries*, whether it be their desire to continue as members of the Society.

Date of Election.			
1847	June 2.	*Abbott, Major-Genl. J., Royal Artillery.	Europe
1860	Dec. 8.	Abdullatif, Khan Bahadur, Munsif.	Calcutta
1868	Sept. 2.	†Adam, R. M., Esq.	Agra
1865	June 7.	Agabeg, J., Esq.	Calcutta
1860	July 4.	†Ahmad Khan, Saied, Bahadur.	Allyghur
1860	April 4.	*Aitchison, J. E. T., Esq., M. D.	Europe
1859	Feb. 2.	*Alabaster, C., Esq.	China
1866	Jan. 17.	†Allen, Lieut.-Col. A. S.	Allahabad
1852	July 7.	*Allen, C., Esq., B. C. S.	Europe
1864	May 4.	†Alexander, N. S., Esq., C. S.	Mymensing
1867	Aug. 7.	†Amery, C. F., Esq.	Umritsur
1860	Oct. 3.	Amir Ali Khan, Munsif.	Calcutta
1861	May 1.	Anderson, Dr. T., F. L. S.	Calcutta
1865	Jan. 11.	Anderson, Dr. J., F. L. S.	Calcutta
1843	Sept. 4.	*Anderson, Lieut.-Col. W., Bengal Artillery.	Europe
1866	July 4.	†Anderson, A., Esq.	Fyzabad
1864	Dec. 7.	*Anderson, W., Esq.	Europe
1860	Nov. 7.	†Anley, W. A. D., Esq., C. E.	Saran
1861	Sept. 4.	*Asghur Ali Khan Bahadur, Nawab.	Europe
1861	July 3.	*Asphar, J. J. T. H., Esq.	Europe
1855	July 4.	Atkinson, W. S., Esq., M. A., F. L. S.	Calcutta
1826	Sept. 6.	Avdall, J., Esq.	Calcutta
1835	Oct. 7.	*Baker, Col. W. E., Bengal Engineers.	Europe
1865	Nov. 1.	Ball, V., Esq., Geol. Survey.	Calcutta.

Date of Election.		
1860 Nov. 7.	†Banerji, The Rev. K. M.	Burdwan
1864 May. 4.	*Barry, Dr. J. B.	Europe
1866 Jan. 17.	Barton, The Rev. J.	Calcutta
1862 Aug. 6.	†Basevi, Capt. J. P., Royal Engineers.	Bangalore
1860 July 4.	Batten, G. H. M., Esq., B. C. S.	Calcutta
1838 Jan. 3.	*Batten, J. H., Esq., B. C. S.	Europe
1859 May 4.	Bayley, E. C., Esq., B. C. S.	Calcutta
1861 Feb. 6.	†Bayley, S. C., Esq., B. C. S.	Patna
1868 May 6.	*Baynes, J., Esq.	Europe
1849 June 6.	*Beadon, The Hon'ble Sir Cecil, B. C. S.	Europe
1864 Sept. 7.	*Beames, J., Esq., B. C. S.	Europe
1841 April 7.	Beaufort, F. L., Esq., B. C. S.	Calcutta
1861 Sept. 4.	*Beavan, Lieut. B. C., late 62nd B. N. I.	Europe
1847 Aug. 4.	*Beckwith, J., Esq.	Europe
1867 July 3.	†Belletty, N. A., Esq., Civil Assistant Surgeon.	Cherra-Punjí
1830 Sept. 1.	*Benson, Lieut.-Col. R.	Europe
1862 Oct. 8.	†Bernard, C. E., Esq., B. C. S.	Nagpore
1862 June. 4.	†Bhau Daji, Dr.	Bombay
1868 Apl. 1.	Bholánátha Chandra, Bábu.	Calcutta
1864 Nov. 2.	Bhudeva Mukerjea, Bábu.	Chinsurah
1840 July 15.	*Birch, Major-General Sir R. J. H., K. C. B.	Europe
1846 Mar. 4.	*Blagrove, Major T. C., 26th Regt. B. N. I.	Europe
1859 Sept. 7.	Blane, Lieut.-Col. S. J.	Calcutta
1857 Mar. 4.	Blanford, H. F., Esq., A. R. S. M., F. G. S.	Calcutta
1859 Aug. 3.	Blanford, W. T., Esq., A. R. S. M., F. G. S., Geol. Survey.	Calcutta
1864 April 6.	Blochmann, H., Esq., M. A.	Calcutta
1857 Aug. 2.	*Bogle, Lieut.-Col. Sir A., Kt.	Europe
1859 Aug. 3.	Boláichanda Sing, Bábu.	Calcutta
1866 June 6.	Bourke, W. M., Esq.	Calcutta
1867 May 1.	†Bonavia, E., Esq., M. D., Asst. Surgeon.	Lucknow
1859 Oct. 12.	†Bowring, L. B., Esq., B. C. S.	Mysore, Coorg
1868 Jan. 15.	†Boxwell, J., Esq., C. S.	Puri
1854 Nov. 1.	*Boycott, Dr. T., B. M. S.	Europe
1860 Mar. 2.	Brandis, Dr. D.	Calcutta
1860 Oct. 3.	*Brandreth, The Hon'ble J. E. L.	Europe
1862 Jan. 15.	*Briggs, Lieut.-Col. D.	Europe
1866 April 4.	*Broderick, H. C., Esq., M. D.	Europe
1847 June 2.	*Brodie, Capt. T., 5th Regt. B. N. I.	Europe

Date of Election.		
1866 Jan. 17.	*Brown, Lieut.-Col. D.	Europe
1860 Nov. 7.	†Browne, Capt. Horace A.	Amherst
1866 June 6.	†Brownfield, C., Esq.	Kamarup.
1868 June 3.	†Buck, E. C., Esq., C. S.	Cawnpore
1866 June 6.	Buckle, Dr. H. B., C. B.	Calcutta
1856 Sept. 3.	Bashiruddin, Sultan Mohammad.	Serampore
1867 Sept. 4.	†Butler, Lieut. J.	Gowhati
1860 June 6.	†Campbell, C., Esq., C. B.	Jubbulpore
1859 Sept. 7.	*Campbell, Dr. A.	Europe
1863 June 3.	*Campbell, The Hon'ble G.	Europe
1860 Jan. 3.	†Carnac, H. Rivett, Esq., B. C. S.	Nagpore
1865 Nov. 1.	†Carnegy, P., Esq.	Fyzabad
1867 Dec. 4.	†Chambers, F. J., Esq.	Lucknow
1868 Augt. 5.	†Chandramohana Gosvami.	Gowhatti
1867 Dec. 4.	†Chisholm, J. W., Esq.	Belaspore
1863 Aug. 5.	†Chandranatha Raya, Kumar.	Natore.
1868 Feb. 5.	†Clark, Major E., Bengal Staff.	Baraitch
1863 April 1.	*Cleghorn, Dr. H.	Europe
1864 May 4.	†Cline, Esq., G. W., LL. D., F. G. S.	Nagpore
1861 Sept. 4.	†Cockburn, J. F., Esq., C. E.	Kurhurbari Colliery
1868 Nov. 4.	†Cole, Lieut. H. H., Royl. Engr.	Sealkote
1862 April 2.	†Colles, J. A. P., Esq., M. D.	Hazara
1851 Mar. 5.	*Colvin, J. H. B., Esq., B. C. S.	Europe
1868 Dec. 2.	Cooke, J. E., Esq.	Calcutta
1860 Dec. 5.	*Cooper, F. H., Esq., B. C. S.	Europe
1857 Mar. 4.	*Cowell, E. B., Esq., M. A.	Europe
1868 May 6.	†Coxhead, T. E., Esq., C. S.	Magura
1866 May. 2.	*Cox, W. H., Esq.	Europe
1866 Jan. 17.	Crawford, J. A., Esq., C. S.	Calcutta
1861 July 3.	*Crockett, Oliver R., Esq.	China
1867 Aug. 7.	†Curran, R. H., Esq., L. R. C. S., L. K. R. C. P.	Port Blair
1868 Sept. 2.	Cutsem, E. Ch. Van, Esq.	Calcutta
1866 Feb. 7.	†Daly, N., Esq.	Mayanoung, Burma
1862 April 2.	*Dalrymple, F. A. E., Esq., C. S.	Europe
1847 June 2.	†Dalton, Lieut.-Col. E. T., 9th Regt. B. N. I.	Chota Nag- pore
1861 Mar. 6.	*Davey, N. T., Esq., Revenue Surv.	Europe
1865 May 3.	†Davies, C., Esq.	Rotasghur
1861 Nov. 6.	†Davies, R. H., Esq., B. C. S.	Lucknow
1864 July 6.	Devendra Mallika, Babu.	Calcutta
1856 June 4.	*DeBourbel, Major R., Bengal Engrs.	Europe
1861 June 5.	*Denison, His Excellency Sir W., K. C. B.	Europe

Election.		
Feb. 4.	†Dev Narayana Singh, The Hon'ble Rájah.	Benares
Mar. 6.	*Devereux, The Hon'ble H. B., B. C. S.	Europe
May 7.	†Dhanapati Singha Dooghur, Ráyah Bahádur.	Azimgunj
Sept. 7.	Dickens, Lieut.-Col. C. H.	Calcutta
Nov. 7.	Digamvara Mitra, Bábu.	Calcutta
Sept. 7.	*Douglas, Col. C.	Europe
Dec. 7.	*Dunlop, H. G., Esq.	Europe
June 5.	†Duthoits, W., Esq., C. S.	Mirzapore
May 1.	*Earle, Capt. E. L., Bengal Artillery.	Europe
May 6.	*Eatwell, Dr. W. C. B.	Europe
Oct. 7.	†Edowes, W., Esq., M. D.	Erinpur
Oct. 7.	*Edgeworth, M. P., Esq., B. C. S.	Europe
May 6.	†Edgar, J. W., Esq., B. C. S.	Cachar
Feb. 1.	†Egerton, Ph., Esq., B. C. S.	Umritsar
Jan. 7.	*Elliott, Sir Walter, late M. C. S.	Europe
Nov. 2.	†Elliott, C. A., Esq., B. C. S.	Furruckabad
Mar. 5.	*Ellis, Lieut.-Col. R. R. W., 23rd Regt. B. N. I.	Europe
Nov. 1.	†Elphinstone, Capt. M. W., 4th Regt. B. N. I.	Lahore
Sept. 2.	Ernsthausen, Baron O.	Calcutta
Jan. 9.	*Erskine, The Hon'ble C. J., Bombay C. S.	Europe
Aug. 6.	*Erskine, Major W. C. B.	Europe
Oct. 7.	Ewart, Dr. J.	Calcutta
Aug. 6.	*Eyre, Col. Vincent, C. B.	Europe
June 7.	Fawcus, Dr. J.	Calcutta
May 7.	Fayrer, Dr. J., C. S. I.	Calcutta
Jan. 15.	†Fedden, Francis, Esq., Geol. Survey.	Bombay
May 6.	*Field, C. D., Esq., C. S.	Europe
Oct. 12.	*Fisher, A., Esq.	China
Mar. 7.	*Fitzwilliam, The Hon'ble W. S.	Europe
April 5.	†Fleming, Dr. J. M., 29th N. I.	Nimar,
April 3.	*Ford, Lieut.-Col. B.	Europe
Feb. 6.	†Forest, R., Esq., Civil Engineer.	Etawah
June 3.	Francis, Dr. C. R.	Calcutta
Dec. 2.	†Forsyth, Lieut. J., Bengl. Staff Corps.	Nimar,
June 3.	†Forsyth, T. D., Esq., C. B.	Jullundir
April. 1.	†Frederic of Schleswig Holstein, H. S. H. Prince.	Europe
Mar. 7.	*Frere, His Excellency Sir H. Bartle, K. C. B., B. C. S.	Europe

Date of Election.			
1859 Oct. 12.	*Furlong, Major J. G. Esq.	Europe	
1859 Dec. 7.	Futteh Ali, Maulvi.	Calcutta	
1867 Sept. 4.	Fyfe, W., The Rev.	Calcutta	
1849 Sept. 5.	†Fytche, Col. A., C. S. B., Chief Comiss. of Burmah.	Rangoon	
1864 Aug. 11.	†Garrett, C. B., Esq., C. S.	Shahabad	
1859 Aug. 8.	Gastrell, Col. J. E., 12th Regt. N. I., Supdt. Rev. Survey.	Calcutta	
1867 Dec. 4.	†Gay, E., Esq.	Bombay	
1867 Sept. 4.	Gauvain, Capt. V.	Calcutta	
1868 Nov. 4.	†Geddes, J. C., Esq., C. S.	Poores	
1859 Sept. 7.	Geoghegan, J., Esq., B. C. S.	Calcutta	
1865 June 7.	†Giles, A. H., Esq.	Krishnagar	
1842 Sept. 2.	*Gladstone, W., Esq.	Europe	
1867 May 1.	Glover, the Hon'ble F.	Calcutta	
1861 Feb. 6.	†Godwin-Austen, H. H., Capt., Topograph. Survey.	Cheera Poonji	
1859 Sept. 7.	*Goodeve, E., Esq., M. D.	Europe	
1862 July 2.	Gordon, J. D., Esq., C. S.	Calcutta	
1864 Dec. 5.	†Gurucharana Dása, Bábu.	Jamukandi	
1862 Feb. 5.	†Gauradasa Basaka, Bábu.	Khuna	
1863 Nov. 4.	†Gowan, Lieut.-Col. J. G.	Morar, Gwalior	
1859 Dec. 7.	*Grant, Sir J. P., K. O. B.	Europe	
1860 Jan. 4.	*Grant, T. R., Esq.	Europe	
1867 Aug. 7.	Granville, W. L., Esq.	Calcutta	
1867 June 5.	†Gregory, Lieut. J., Depy. Comr.	Samoogooting	
1860 July 4.	Grey, The Hon'ble W., B. C. S., Lieut.- Governor of Bengal.	Calcutta	
1866 June 6.	†Gribble, T. W., Esq., B. C. S.	Kooshtea	
1861 Sept. 4.	†Griffin, L. H., Esq., B. C. S.	Umritsar,	
1860 Nov. 7.	†Griffith, R. T. H., Esq.	Benares	
1861 Feb. 6.	†Growse, F. S., Esq., B. C. S.	Mynpoorie	
1862 Feb. 5.	*Guthrie, Col. C. S., Bengal Engrs.	Europe	
1867 July 3.	†Hacket, C. A., Esq., Geol. Survey.	Agra	
1847 June 2.	*Hall, F. E., Esq., M. A., D. C. L.	Europe	
1866 Jan. 17.	†Hamilton, Major T. O.	Rangoon	
1863 June 3.	*Hamilton, Col. G. W.	Europe	
1855 Mar. 7.	†Hamilton, R., Esq.	Wardah	
1847 May 5.	*Hannington, Col. J. C., 63rd Regt. N. I.	Europe	
1859 Oct. 12.	*Hardie, Dr. G. K.	Europe	
1866 Nov. 1.	Harendra Krishna, Kumar.	Calcutta	
1862 Oct. 8.	*Harington, The Hon'ble H. B.	Europe	
1860 Oct. 3.	†Harris, E. B., Esq., C. E., District Engineer.	Burdwan	

f Election.		
Feb. 6.	†Harrison, A. S., Esq., B. A.	Bareilly
Oct. 12.	†Haughton, Lieut.-Col. J. C., C. S. I.	Cooch Behar
Aug. 6.	*Heeley, W. L., Esq., C. S.	Europe
April 4.	Henry, N. A., Esq.	Calcutta
Aug. 3.	†Henessey, J. B. N., Esq.	Dehra Dhoon
July 6.	*Herschel, W. J., Esq., B. C. S.	Europe
Mar. 1.	*Hichens, Lieut. W., Bengal Engrs.	Europe
Jan. 17.	†Hicks, J. G., Esq.	Lahore
Aug. 5.	†Hobart, R. T., Esq., C. S.	Busti
May 2.	Hobhouse, The Hon'ble C. P., B. C. S.	Calcutta
Mar. 7.	†Hopkinson, Lieut.-Col. H. H.	Assam
July 1.	*Horne, C., Esq., C. S.	Europe
Mar. 7.	Hovender, Major J. J., Bengal Engrs.	Calcutta
Jan. 15.	†Howell, M. S., Esq., C. S.	Dehra Dhoon
Sept. 4.	†Hughes, A. J., Esq., C. E.	Dariabad
Aug. 17.	†Hughes, T. H., Esq., A. R. S. M., F. G. S., Geol. Survey.	Hazarebagh
Aug. 7.	*Hughes, Lieut. W. G.	Europe
Nov. 4.	†Holroyd, Capt. W. R. M.	Punjab
Feb. 7.	*Hoyle, G. W., Esq.	Europe
May 1.	*Hyatt, Dr. B. N., Civil Surgeon.	Europe
April 1.	Hyde, Col. H.	Calcutta
Mar. 7.	†Irvine, W., Esq., C. S.	Mozuffernugger
Jan. 4.	†Innes, Major J. J. M.	Punjab
Oct. 8.	†Irwin, Valentine, Esq., C. S.	Tipperah
Dec. 7.	†Isirvaprásáda Singha, Bahádur, Rájah,	Benares
Sept. 7.	Jackson, The Hon'ble E.	Calcutta
Mar. 5.	*Jackson, W. B., Esq., B. C. S.	Europe
Dec. 4.	*James, Major H. R., C. B.	Europe
Sept. 7.	*Jardine, R., Esq., C. S.	Europe
Dec. 3.	†Jerdon, Dr. T. C.	Assam
Feb. 7.	†Johnson, W. H., Esq.	Sealkote
June 2.	†Johnstone, J., Esq.	Europe
Mar. 5.	†Johnstone, Capt. J. W. H., Assistant Commissioner.	Shahpore
Dec. 4.	†Johnstone, Lieut. 'J., Special Asst. Keonghur.	Bhuddruck
Sept. 7.	*Jones, R., Esq.	Europe
June 7.	†Jayakissen, Dása Bahádur, Rájah.	Allyghur
Mar. 7.	Kadarenatha Mukerji.	Bhowanipore
Feb. 3.	Kaliprasanna Singha, Bábu.	Calcutta

Date of Election.			
1863	July 1.	*Kane, H. S., Esq., M. D.	Europe
1868	Feb. 5.	†Kavanagh, J., Esq.	Goond, Oudh
1850	April 8.	*Kay, The Rev. W., D. D.	Europe
1861	Dec. 15.	†Kempson, M., Esq., M. A.	Bareilly
1867	Dec. 4.	†King, G., Esq., M. D.	Saharunpore
1867	Mar. 6.	†King, Capt. H. W.	India
1862	Jan. 15.	†King, W., Jr., Esq., Geol. Survey.	Madras
1867	Mar. 6.	†Knox, G. E., Esq., C. S.	Meerut
1839	Mar. 6.	*Laidlay, J. W., Esq.	Europe
1861	Mar. 6.	*Laing, The Hon'ble S.	Europe
1863	Sept 2.	Lane, T. B., Esq., B. C. S.	Calcutta
1851	Dec. 8.	†Layard, Lieut.-Col. F. P.	Bhagulpore
1868	Sept. 2.	Lazarus, C., Esq.	Calcutta
1852	April 7.	*Lees, Major W. N., LL. D.	Europe
1868	Feb. 5.	†Lees, L. H., Esq., M. D.	Simla
1868	July 1.	†Leitner, Dr. G. W.	Lahore
1859	Dec. 7.	Leonard, H., Esq., C. E.	Calcutta
1865	June 7.	*Lewin, Capt. T. H.	Europe
1856	Feb. 6.	*Liebig, Dr. G. Von.	Europe
1860	Jan. 4.	Lindsay, E. J., Esq.	Calcutta
1862	Dec. 8.	*Lobb, S., Esq., M. A.	Europe
1864	Nov. 2.	Locke, H. H., Esq.	Calcutta
1866	May 2.	*Lovett, Lieutenant B.	Ispahan
1866	Jan. 17.	†Low, James, Esq., G. T. S.	Dehra Dhoon
1861	April 3.	†Lumsden, Lieut.-Col. P. S.	Simla
1854	Nov. 1.	*Lushington, F. A., Esq., B. C. S.	Europe
1868	Dec. 2.	†Macauliffe, M., Esq., C. S.	Multan
1866	June 6.	Macdonald, Major J., Staff Corps.	Calcutta
1848	April 5.	†MacLagan, Lieut.-Col. R., F.R.S.E.	Lahore
1866	Jan. 17.	†Macgregor, Lieut. C. M.	Simla
1865	Nov. 1.	Mackenzie, A., Esq., C. S.	Calcutta
1853	April 6.	Macrae, Dr. A. C.	Calcutta
1867	July 3.	Mackenzie, C. S., Esq., M. D.	Calcutta
1867	July 3.	Macnamara, Dr. C.	Calcutta
1863	Jan. 15.	Maine, The Hon'ble H. S.	Calcutta
1867	April 3.	†Mainwaring, Lieut.-Col. G.	Darjeeling
1860	Jan. 4.	*Mair, D. K., Esq., M. A.	Europe
1865	Mar. 1.	Malleson, Lieut.-Col. G. B.	Calcutta
1862	Sept. 3.	†Mallot, F. R., Esq., Geol. Survey.	Nowgong, Bun- delaund
1860	July 4.	†Man, E. G., Esq.	Burdwan
1852	Nov. 3.	Mauickjee Rustomjee, Esq.	Calcutta
1861	June 5.	†Mána Singha Bahádur, Mahárájah.	Oudh
1867	Mar. 6.	Markby, The Hon'ble W.	Calcutta

of Election.		
Aug. 11.	*Marks, The Rev. J. Ebenezer.	Europe
July 1.	†Marshall, Lieut. C. H. T.	Lahore
Jan. 2.	*Marshman, J. C., Esq.	Europe
Oct. 7.	†Martin, T., Esq., C. E.	Midnapore
Nov. 4.	*McClelland, Dr. J.	Europe
Oct. 4.	†McLeod, The Hon'ble Sir D.F., C.B., B. C. S.	Lahore
Mar. 7.	†Medlicott, H. B., Esq., F. G. S., Geol. Survey.	Daltongunj
Feb. 6.	Melville, Capt. A. B., late 67th N. I., Surv. Genl.'s Dept.	Calcutta
Nov. 7.	*Middleton, J., Esq.	Europe
June 5.	Milman, R., D. D., The Right Rev. Lord Bishop of Calcutta.	Calcutta
April 3.	*Mills, A. J. M., Esq., B. C. S.	Europe
April 3.	Mahendralala Saracara, Dr.	Calcutta
April 7.	†Money, D. J., Esq., B. C. S.	Bhagulpore
Feb. 6.	*Money, W. J., Esq.	Europe
Mar. 6.	†Montgomerie, Capt. T. G.	Dera Doon.
July 5.	†Morland, Major J.	Delhi
Dec. 6.	†Morris, G. G., Esq., B. C. S.	Backergunge
Aug. 5.	†Muir, Capt. W. J. W.	Abu,
July 5.	*Muir, J., Esq.	Europe
Oct. 11.	†Muir, The Hon'ble Sir. W., B. C. S.	Allahabad
July 2.	*Napier of Magdala, Lord R., General, R., G. C. S. I. K. C. B.	Bombay
May 1.	Nelson, J. B., Esq.	Calcutta
Nov. 7.	*Newmarch, Lieut-Col. C. D.	Europe
Feb. 1.	*Newul Kishwar, Múnshi.	Lucknow
Sept. 1.	*Nicholls, Capt. W. T., 24th Regi- ment M. N. I.	Europe
Jan. 15.	Norman, The Hon'ble J. P.	Calcutta
June 5.	Obhayacharana Mallika, Bábu.	Calcutta
June 4.	*Oldham, Ch., Esq., Geol. Survey.	Europe
June 4.	Oldham, Th., Esq., LL. D., F. R. S. Geol. Survey.	Calcutta
Aug. 7.	†Oldham, A., Esq., C. E.	Koosthea
Dec. 7.	Onslow, D. B., Esq.	Calcutta
July 4.	*Ormsby, M. H., Esq., C. E., Geol. Survey.	Europe
June 7.	*O'Shaughnessy, Sir W. B.	Europe
Feb. 10.	*Ousely, Major W. R.	Europe
Mar. 2.	*Palmer, Dr. W. J.	Europe
Nov. 4.	†Pearson, C., Esq.	Punjab
May 7.	Partridge, S. B., Esq., M. D.	Calcutta
Aug. 5.	†Perkins H. E., Esq., C. S.	Hoshiarpore Punjab

Date of Election.		
1867 Feb. 6.	Paul, J., Esq.	Calcutta
1860 Feb. 1.	*Pearse, Major G. G.	Europe
1867 Mar. 6.	Pearimahana Mukerji, M.A., Bábu.	Uttaraparah
1864 Mar. 2.	*Pellew, F. H., Esq., C. S.	Europe
1865 Sept. 6.	†Peppe, J. H., Esq.	Gya
1868 May 6.	Peterson, F. W., Esq.	Calcutta
1867 Nov. 6.	*Petit, Mons. Eugene.	Europe
1885 July 1.	*Phayre, Col., Sir A. P., K.C.S.L., O.B.	Europe
1864 Nov. 2.	Phear, The Hon'ble J. B.	Calcutta
1868 May 6.	Pirie, A., Esq.	Calcutta
1867 Sept. 4.	*Place, Mons. V. Consul-Gen. Franco.	Europe
1862 Oct. 8.	†Pulinvehari Sen, Bábu.	Berhampore
1868 April 1.	†Pramathanatha Raya, Kumar.	Digapati
1839 Mar. 6.	Pratt, Ven'ble Archdeacon J.H., M.A.	Calcutta
1860 Jan. 4.	Pryanath Seta, Bábu.	Calcutta
1825 Mar. 9.	*Prinsep, C. R., Esq.	Europe
1864 Feb. 8.	†Pullan, Lieut. A., G. T. Survey.	Dehra Dhoon
1858 April 6.	Radhanatha Sikdara, Bábu.	Calcutta
1849 Sept. 5.	Rajendra Dutt, Bábu.	Calcutta
1856 Mar. 5.	Rajendralála Mitra, Bábu.	Calcutta
1868 Jan. 15.	†Rakhaladasa Haldára, Bábu.	Purulesa
1864 May 4.	Ramánath Bose, Bábu.	Calcutta
1837 Feb. 1.	Ramánath Takura, Bábu.	Calcutta
1866 Jan. 17.	†Rattray, A., Esq., Asst. Commr., Hill Tracts.	Chittagong
1860 Mar. 7.	†Reid, H. S., Esq.	Oudh
1868 June 3.	Reinhold, H., Esq.	Calcutta
1868 July 1.	†Renny, R. H., Esq.	Chittagong
1864 Dec. 7.	†Richardson, R. J., Esq., C. S.	Shahabad
1857 June 7.	*Riddell, Hon'ble H. B., B. C. S.	Europe
1868 April 1.	Robb, G., Esq.,	Calcutta
1868 July 1.	Roberts, The Rev. J.	Calcutta
1863 April 1.	†Robertson, C., Esq., C. S.	Nyne Tál
1865 Feb. 1.	Robinson, S. H., Esq.	Calcutta
1847 Dec. 1.	*Rogers, Capt. T. E.	Europe
1866 Dec. 5.	Ross, J. M., Esq.	Calcutta
1859 Sept. 7.	†Russell, A. E., Esq., B. C. S.	Burdwan
1865 June 7.	Sáradáprasád Mukerji, Bábu.	Baraset
1856 Aug. 6.	Satyasaran Ghosala, Rájah. S.	Bhookylas, Calcutta
1861 Dec. 4.	†Saunders, C. B., Esq., B. C.	Hyderabad
1864 June 1.	Saunders, J. O'B., Esq.	Calcutta
1854 Dec. 6.	†Saxton, Lt.-Col. G. H., F. G. S., 38th M. N. I.	Ootacamund
1854 May 2.	Schiller, F., Esq.	Calcutta
1860 Feb. 1.	Scott, Col. E. W. S.	Europe

e of Election.		
Jan. 17.	†Seaton, Capt. W. J.	Rangoon
July 4.	†Shelverton, G., Esq.	Waltair
Sept. 5.	†Sherer, Major J. F.	Kamrup
April 3.	†Sheriful Omrah, The Hon'ble Navab Sir, Bahádur, K. C. S. I.	Madras
Jan. 14.	*Sherwill, Lt.-Col. W. S., 66th Regiment B. N. I., F. G. S., F. R. G. S.	Europe
Oct. 7.	Shircore, Dr. S. M.	Calcutta
April 1.	†Showers, Lieut.-Col. C. L.	Agra
June 6.	Sime, J., Esq. B. A.	Calcutta
Sept. 7.	†Sladen, Capt. E. B.	Mandalay
June 6.	†Smart, R. B., Esq., Rev. Sur.	Raipore, Cen- tral Province
July 5.	†Smith, D. Boyes, Esq., M. D.	Calcutta
April 1.	†Smith, McLaren W., Esq.	Berhampore
July 1.	Smith, W., Esq., C. E.	Calcutta
Feb. 6.	*Smith, Col. J. F.	Europe
Sept. 6.	†Spankie, The Hon'ble R., B. C. S.	Agra
Mar. 2.	†Spearman, Lieut. R.	Rangoon
May 1.	*Steel, Lieut. E. I., R. A.	Europe
Sept. 4.	†Stevens, W. H., Esq., C. E.	Darbhanga
Dec. 4.	*Stephen, Major J. G., 8th N. I.	Europe
Sept. 2.	Stewart, R. D., Esq.	Calcutta
April 6.	†Stewart, J. L., Esq., M. D.	Lahore
Sept. 4.	Stokes, Whitley, Esq.	Calcutta
Nov. 4.	Stoliczka, F., Esq., Ph. D., F. G. S., Geol. Survey.	Calcutta
Sept. 2.	Stoney, R. V., Esq., C. S.	Calcutta
May 3.	Strachey, Col. R., F. R. S., F. L. S., F. G. S.	Calcutta
Mar. 2.	†Stubbs, Major F. W., Beng. Artil- lery.	Umritsar
July 7.	*Sutherland, H. C., Esq., B. C. S.	Europe
Aug. 11.	Swinhoe W., Esq.	Calcutta
Sept. 3.	Symacharana Sircar, Bábu.	Calcutta
Jan. 17.	Tagore, G. M., Esq.	Calcutta
Sept. 6.	Tawney, C. H., Esq.	Calcutta
April 5.	*Taylor, R., Esq.	Europe
May 2.	Temple, Sir R., K. C. S. I., B. C. S.	Calcutta
Mar. 2.	†Theobald, W., Jr., Esq., Geological Survey.	B. Burma
June 6.	*Thompson, J. G., Esq.	Europe
Mar. 4.	*Thompson, Major G. H., Bengal Staff Corps.	Europe

Date of Election.			
1863	June	4.	†Thornton, T. H., Esq.
1847	June	2.	*Thuillier, Col. H. L., F. R. G. S. Bengal Artillery.
1863	May	6.	†Thuillier, Lt. H. R.
1862	July	2.	*Thurlow, The Hon'ble T. J. H.
1865	July	5.	†Tolbort, T. W. H., Esq., O. S.
1865	July	5.	Tonnerre, Dr. O. F.
1862	Feb.	5.	*Torrena, Col. H. D.
1861	June	5.	†Tremlett, J. D., Esq., O. S.
1863	Mar.	4.	*Trevelyan, The Right Hon'ble Sir O., K. C. B.
1841	Feb.	8.	*Trevor, The Hon'ble C. B., B. C. S.
1864	Mar.	2.	†Trevor, Lt. E. A., Royal Eng. Marine Lines.
1861	Sept.	4.	Tween, A., Esq., Geological Survey.
1863	May	6.	†Tyler, Dr. J.
1860	May	2.	†Vanrenen, Capt. A. D., late 71st B. N. I.
1864	Feb.	8.	†Verchere, A. M., Esq., M. D.
1864	April	6.	†Vijayarāma Gajapati Raj Munnia Sultan Bahādur, Māharājah Mirza.
1865	Nov.	1.	Waldie, D., Esq., F. R. C. S.
1861	May	1.	†Walker, Lt.-Col. J. T., Bomb. Engra.
1863	Dec.	2.	†Walker, A. G., Esq., C. S.
1863	May	6.	*Wall, P. W., Esq., C. S.
1863	Oct.	7.	Waller, W. K., Esq., M. B.
1863	Dec.	2.	Walters, The Rev. M. D. C.
1862	Jan.	15.	†Ward, G. E., Esq., B. C. S.
1852	July	7.	*Ward. J. J., Esq., B. C. S.
1859	July	6.	*Warrand, R. H. M., Esq., B. C. S.
1865	May	8.	*Waterhouse, Lieut. J., Royal Ar- tillery,
1854	July	5.	*Watson, J., Esq., B. C. S.
1847	Nov.	3.	*Waugh, Major-General Sir A. S., C. B., F. R. S., F. R. G. S.
1867	Feb.	6.	†Westmacott, E. V., Esq., B. A., C. S.
1862	Oct.	8.	Wheeler, J. T., Esq.
1867	Aug.	7.	†Wilcox, F., Esq., Bengal Police.
1864	Mar.	2.	†Wilkinson, C. J., Esq.
1861	Sept.	4.	†Williams, Dr. C., H. M.'s 68th Regt.
1867	Jan.	16.	†Williamson, Lieut. W. J.
1867	Mar.	6.	Willson, W. G., Esq., B. A.
1859	Sept.	7.	†Wilson, W. L., Esq., Geol. Survey.
1859	Aug.	3.	†Wilmot, C. W., Esq.
1865	Feb.	1.	†Wilmot, E., Esq.
1866	Mar.	7.	†Wise, Dr. J. F. N.
			Punjab, Lahore
			Calcutta
			Faridpore
			Europe [Jab
			Ludiana, Pun-
			Calcutta
			Europe
			Simla
			Europe
			Europe
			Bombay
			Calcutta
			Mynporie
			Bijnour
			Jellunder
			Vizianagaram
			Calcutta
			Mussorie
			Onao, Oudh
			Europe
			Calcutta
			Calcutta
			Meerut
			Europe
			Europe
			Europe
			Europe
			Europe
			Dinagapore
			Calcutta
			Prulea,
			Calcutta
			Rangoon
			Garrow Hills
			Calcutta
			Sangor
			Rājmahāl
			Delhi
			Dacca

Date of Election.				
1867	July	3.	† Wood, Dr. J. J.	Ranchee
1851	May	7.	Woodrow. H, Esq., M. A.	Calcutta
1859	Mar.	2.	*Wortley, Major A. H. P.	Europe
1862	Aug.	6.	*Wylie, J. W. Esq., Bombay C. S.	Europe
1868	June	3.	Yatindramohana Thakura.	Calcutta
1858	April	4.	*Young, Lt.-Col C. B.	Europe
1856	July	2.	*Yule, Col. H., R. E.	Europe

LIST OF HONORARY MEMBERS.

Date of Election				
1825	Mar.	9.	M. Garcin de Tassy, Membre del'Inst.	Paris
1826	„	1.	Sir John Phillippart.	London
1829	July	1.	Count De Noe.	Paris
1831	„	7.	Prof. C. Lassen.	Bonn
1834	Nov.	5.	Sir J. F. W. Herschel, F. R. S.	London
1834	„	5.	Col. W. H. Sykes, F. R. S.	London
1835	May	6.	Prof. Lea.	Philadelphia
1842	Feb.	4.	Dr. Ewald.	Göttingen
1842	„	4.	Right Hon'ble Sir Edward Ryan, Kt.	London
1843	Mar.	30.	Prof. Jules Mohl, Memb. de l' Instit.	Paris
1847	May	5.	His Highness Hekekyan Bey.	Egypt
1847	Sept.	1.	Col. W. Munro.	London
1847	Nov.	3.	His Highness the Nawab Nazim of Bengal.	Murshidabad
1848	Feb.	2.	Dr. J. D. Hooker, R. N., F. R. S.	Kew
1848	Mar.	8.	Prof. Henry.	Princeton, United States
1853	April	6.	Major-Gen. Sir H. C. Rawlinson, K. C. B., F. R. S., D. C. L.	London
1854	Aug.	2.	Col. Sir Proby T. Cautley, K. C. B., F. R. S.	London
1858	July	6.	B. H. Hodgson, Esq.	Europe
1859	Mar.	2.	The Hon'ble Sir J. W. Colvile, Kt.	Europe
1860	„	7.	Prof. Max Müller.	Oxford
1860	Nov.	7.	Mons. Stanislas Julien.	Paris
1860	„	7.	Dr. Robert Wight,	London
1860	„	7.	Edward Thomas, Esq.	London
1860	„	7.	Dr. Aloys Sprenger.	Germany
1860	„	7.	Dr. Albrecht Weber,	Berlin
1865	Sept.	6.	Edward Blyth, Esq.	Europe
1868	Feb.	5.	Genl. A. Cunningham,	London
1868	„	5.	Prof. Bápu Déva Sástri,	Benares
1868	„	5.	Dr. T. Thomson, F. R. S., F. L. S., F. G. S.	London
1868	Sept.	2.	A. Grote, Esq., C. S.	London

LIST OF CORRESPONDING MEMBERS.

Date of Election.				
1844	Oct.	2.	Macgowan, Dr. J.	Europe
1856	June	4.	Kramer, Herr. A. von	Alexandria
1856	"	4.	Porter, The Rev. J.	Damascus
1856	"	4.	Schlagintweit, Herr H. von	Bavaria
1856	"	4.	Smith, Dr. E.	Beyrout
1856	"	4.	Taylor, J., Esq.	Bussorah
1856	"	4.	Wilson, Dr.	Bombay
1857	Mar.	4.	Neitner, J., Esq.	Ceylon
1858	Mar.	8.	Schlagintweit, Herr H. R. von	Giesen
1859	Nov.	2.	Frederick, Dr. H.	Batavia
1859	May	4.	Bleeker, Dr. H.	Batavia
1860	Feb.	1.	Baker, The Rev. H.	E. Malabar
1860	"	1.	Swinhoe, R., Esq., H. M.'s Consul.	Amoy
1860	April	4.	Hang, Dr. M.	Poonah
1861	July	8.	Gosche, Dr. R.	Berlin
1862	Mar.	5.	Murray, A., Esq.	London
1863	Jan.	15.	Goldstücker, Dr. T.	London
1863	July	4.	Barnes, R. H., Esq.	Ceylon
1866	May	7.	Schlagintweit, Prof. E. von	Prussia
1866	"	7.	Sherring, The Rev. M. A.	Europe
1868	Feb.	5.	Foucaux, M. F. H.	Paris
1868	"	5.	Holmboe, Prof.	Christiania

LIST OF ASSOCIATE MEMBERS.

1835	Oct.	7.	Stephenson, J., Esq.	Europe
1838	Feb.	7.	Keramut Ali, Saied.	Hooghly
1843	Dec.	6.	Long, The Rev. J.	Calcutta
1865	May	3.	Dall, The Rev. C. H. A.	Calcutta

ELECTIONS IN 1868.

ORDINARY MEMBERS.

J. Boxwell, Esq., C. S.	Pooree
Bábu Rakhaladasa Haldára.	Maunbhum
Major E. Clark.	Baraich, Oudh
J. Kavanagh, Esq.	Fyzahad, Oudh
L. H. Lees, Esq., M. D.	Simla
G. Robb, Esq.	Calcutta
H. S. H. Prince Frederick of Schleswig Holstein.	Lahore
W. M. Smith, Esq.	Berhampore

Cumara Pramathanatha Raya.
 Bábu Bholanatha Chandra.
 Col. H. Hyde.
 J. Baynes, Esq.
 T. E. Coxhead, Esq., C. S.
 C. D. Field, Esq., C. S.
 F. W. Peterson, Esq.
 A. Pirie, Esq.
 E. C. Buck, Esq., C. S.
 Bábu Yatindramohana Thakura.
 H. Reinhold, Esq.
 Dr. C. R. Francis.
 Dr. G. W. Leitner.
 Lieut. C. H. T. Marshall.
 The Rev. J. Roberts.
 R. H. Renny, Esq.

Degapati.
 Calcutta
 Calcutta
 Calcutta
 Magora,
 Calcutta
 Calcutta
 Calcutta
 Cawnpore
 Calcutta
 Calcutta
 Calcutta
 Lahore
 Lahore
 Calcutta
 Chittagong Hill-
 Tracts
 Calcutta
 Gowhati
 Bustee
 Abu, Rajputna
 Hoshigarpore
 Agra
 Calcutta
 Calcutta
 Calcutta
 Calcutta
 Erinpur
 Calcutta
 Sealkote
 Punjab
 Punjab
 Chittagong
 Multan
 Calcutta

W. Smith, Esq., C. E.
 Pandita Chandramohana Gosvami,
 R. T. Hobart, Esq., C. S.
 Capt. W. J. W. Muir.
 H. E. Perkins, Esq., C. S.
 R. M. Adam, Esq.
 E. Ch. Van-Cutsem, Esq.
 Baron O. Ernsthansen.
 C. Lazarus, Esq.
 R. V. Stoney, Esq., C. S.
 W. Eddowes, Esq., M. D.
 Dr. S. M. Shircore.
 Lieut. H. H. Cole, R. E.
 Capt. W. R. M. Holroyd.
 C. Pearson, Esq.
 J. C. Geddes, Esq., C. S.
 M. Macauliffe, Esq., C. S.
 J. E. Cooke, Esq.

HONORARY MEMBERS.

Genl. A. Cunningham.
 Dr. T. Thomson.
 A. Grote, Esq.
 Prof. Bápu Déva Sástri.

London
 London
 London
 Benares

CORRESPONDING MEMBERS.

M. F. H. Foucaux.
 Prof. Holmboe.

Paris
 Christiania

LOSS OF MEMBERS DURING 1868.

ORDINARY MEMBERS.

By retirement.

Major F. B. Norman.	Calcutta
H. Beverley, Esq.	Calcutta
C. V. Bradford, Esq.	Hooghly
Bábu Bholá Natha Mallicka.	Calcutta
E. T. Trevor, Esq.	Calcutta
J. Christian, Esq.	Monghyr
E. T. Atkinson, Esq.	Jaunpore
The Hon'ble, L. S. Jackson.	Calcutta
C. U. Aitchison, Esq., C. S.	Umritsar
J. Harris, Esq.	Calcutta
R. A. Sterndale, Esq.	Calcutta
J. H. A. Branson, Esq.	Calcutta
Capt. F. S. Stannton.	Calcutta
A. P. Macdonald, Esq.	Monghyr
J. M. Scott, Esq.	Calcutta
Lient.-Col. B. Reid.	Chamba
Col. J. C. Brooke,	Calcutta
G. A. D. Anley, Esq.	Calcutta
A. W. Croft, Esq.	Calcutta
Dr. T. Duka.	Simla

By death.

H. D. Robertson, Esq.	Sahárunpore
Maulvi Maula Bakas, Khan Bahádur.	Patna
The Hon'ble A. A. Roberts.	Hyderabad
The Hon'ble Prasannakumara Thakura, C. S. I.	Calcutta
C. F. Thornhill, Esq.	Allahabad
S. Fenn, Esq.	Calcutta
F. Hill, Esq.	Calcutta

Struck off.

The Hon'ble R. S. Ellis.	Madras
Máharajah Satischandra Bahádur.	Krishnagur
W. H. Scott, Esq.	Debra
Múnshi Sudderuddin,	Pandoah

[APPENDIX.]

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR
THE YEAR 1868.

STATEMENT

Abstract of the Cash Account

RECEIPTS.				1866.	1867.
ADMISSION FEES.					
Received from the New Members, Rs.	1,280	0	0	1,280	0 0 0
CONTRIBUTIONS.					
Received from the Members, ...	9,771	12	0	9,771	12 0 8,873 12 6
JOURNAL.					
Sale proceeds and Subscription to the					
Journal of the Asiatic Society, ...	1,308	5	0		
Ditto ditto 27 copies of Total Eclipse,	13	8	0		
Refund of Postage Stamps, ...	28	10	0		
Ditto of Packing Charges, ...	1	8	0		
Ditto of Freight, ...	5	4	0		
Commission received from the Baptist					
Mission Press on the bills of the					
Journal, &c., ...	72	15	8	1,425	2 3 2,820 5 9
LIBRARY.					
Sale proceeds of Books, ...	412	8	6		
Refund of Freight, ...	15	4	0		
Ditto of Postage, ...	2	4	0		
Sale proceeds of two large Book Shelves,	50	0	0	479	11 6 437 10 0
SECRETARY'S OFFICE.					
Refund of Freight, ...	7	8	0		
Ditto of Postage, ...	7	10	0	15	2 0 17 5 9
GENERAL ESTABLISHMENT.					
Savings, ...	0	15	3		
Fine, ...	0	12	0	1	11 3 1 4 6
VESTED FUND.					
Received interest on the Government					
Securities from the Bank of Bengal,	110	0	0	110	0 0 110 0 0
COIN FUND.					
Proceeds of sale of duplicates, ...	36	0	0	36	0 0 8 8 0
MUSEUM.					
Refund of the amount paid for the					
furnitures, ...	280	0	0	280	0 0
INEFFICIENT.					
Refund of the amount from Dr. Jerdon,					
paid by the Assistant Curator Baboo					
for Sundries Charges, ...	48	8	0	48	8 0
Carried over, Rs.				13,447	7 0

No. 1.

of the Asiatic Society for 1868.

DISBURSEMENTS.

1868.

1867.

CONTRIBUTIONS.

Paid Commission on collecting sub-
scription bills, ...

Rs. 50 5 3

50 5 3

JOURNAL.

Freight, ... 134 14 6

Printing charges, ... 6,446 11 8

Lithographing and Engraving charges,
&c., ... 603 0 0

Purchase of Postage Stamps, ... 204 1 0

Commission on Sale of Books, ... 39 8 3

Purchase of Journal, ... 307 0 0

Ditto of Blank Books, ... 9 4 0

Ditto of Stationery, ... 3 0 0

Refund of packing charges, ... 2 11 0

Colouring of the Maps, ... 44 9 0

Petty charges, ... 12 18 9

7,807 8 9 4,349 7 6

LIBRARY.

Salary of the Librarian, ... 840 0 0

Establishment, ... 120 0 0

Book-binding, ... 206 1 0

Commission on sale of Books, ... 48 11 0

Purchase of Books, ... 1,468 6 0

Ditto of Custom Receipt Stamps, ... 2 0 0

Freight, ... 5 0 0

Salary of a Punkhaman, ... 27 14 9

Printing charges, ... 20 0 0

Purchase of Stationery, ... 4 0 0

Proportional Exchange on bill of £150, 47 9 8

Landing charges, ... 17 6 9

Petty charges, ... 23 7 9

2,830 8 11 3,207 5 6

SECRETARY'S OFFICE.

General Establishment, ... 294 0 0

Secretary's Office Establishment, ... 1,344 0 0

Purchase of Postage Stamps, ... 116 1 0

Ditto of Stationery, ... 51 13 0

Ditto of Paper files, ... 14 8 0

Ditto of Directory and Army List, ... 25 0 0

Printing charges, ... 122 8 0

Binding Gazettes, ... 31 8 0

Bearing Postage, ... 6 2 6

Subscription to the Medical Gazette, 12 0 0

Petty charges, ... 20 5 6

2,037 14 0 1,633 6 7

Carried over, Rs. 12,726 4 11

XX

RECEIPTS. 1868. 1867.
Brought over, Rs. 13,447 15 0

O. P. FUND.			
Received in part of £63-5-8 advance on bill of Messrs. Williams, and Norgate on account of White Yajurveda,	200	0	0
Ditto by Transfer from Messrs. Williams and Norgate, Sale proceeds of Bibliotheca Indica through them,	276	13	6
		489	12 8 165 10 11
MESSRS. WILLIAMS AND NORGATE.			
Received by Sale proceeds of their Books,	2	8	0
Ditto from Sayyid Karamut Ali, as deposit on their account being the price of a number of the Kamil,	3	0	0
Ditto by Books supplied to the Asiatic Society,	1,370	12	0
Ditto of Postage for sending various letters,	1	10	0
Ditto of Freight for ditto ditto Journal,	21	1	6
Ditto by Transfer to the O. P. Fund for the White Yajurveda,	632	13	6
Ditto by ditto to Babu Prasanno Coomarr Tagore, for distributing Packets of Books in London,	12	8	0
Ditto by ditto to Babu Rajendralala Mitra, for,	6	0	0
Ditto on £150,	82	6	8
		2,192	11 8 299 12 0
GOVERNMENT NORTH WESTERN PROVINCES.			
Refund of Freight paid for sending Journal and Proceedings,	10	14	0
		10	14 0 14 8 0
INDIAN MUSEUM.			
Refund of the amount advanced,	14	8	0
		14	8 0
BOFF STIFTUNG FUND.			
Received on deposit,	213	0	0
		213	0 0
BAPTIST MISSION PRESS.			
Received from Mouvie Abdoolateef, for charges of,	3	0	0
		3	0 0 52 8 0
MAJOR J. F. TENNANTE.			
Refund of the amount paid on the 11th July, 1868,	6	0	0
		6	0 0
MR. A. GROTE, PORTRAIT FUND.			
Received on deposit,	967	0	0
		967	0 0
DR. J. F. N. WISE.			
Refund of the amount paid on the 31st October, 1866,	0	12	0
		0	12 0
		Carried over, Rs. 17,285	9 4

DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 12,726 4 11

VESTED FUND.

Commission to the Bank of Bengal for
drawing interest on the Government
Securities, ...

0 4 4

0 4 4

0 4 4

COIN FUND.

Purchase of Coin, ... 331 0 0

Ditto of a Blank Book, ... 7 8 0

Banghy expenses for returned Coins, ... 0 15 0

Petty charges, ... 0 8 0

339 15 0 417 14 6

BUILDING.

Assessment, ... 432 0 0

Ditto for lighting, ... 96 0 0

Police Rate, ... 144 0 0

Repairing, ... 112 9 0

Paid to the Justices of the Peace for
constructing 3 Gully pits, &c. for
drainage, ...

351 15 3

1,136 8 3 653 8 0

MISCELLANEOUS.

Salary of the Mally, ... 57 0 0

Printing charges, ... 33 0 0

Meeting charges, ... 162 0 0

Advertising charges, ... 212 9 0

Purchase of 2 Lamps, ... 63 0 0

Ditto of Receipt Stamps, ... 2 0 0

Ditto of Stationery, ... 1 0 0

Petty charges, ... 46 11 0

577 4 0 297 0 3

O. P. FUND.

Paid to the Asiatic Society on account
of Loan, ...

183 5 6

Ditto ditto Baptist Mission Press, for
printing charges, ...

5 0 0

Ditto Messrs. Wil-
liams and Nor-
gate, for pur-
chase of White

Yajurveda, ...£50 12 6 506 4 0

Ditto ditto ad-
vertising Bibli-

otheca Indica, ...£0 18 0 9 0 0

Do. do. Freight
and Packing for
distributing Bi-
bliotheca Indi-

ca, ...£11 15 2 117 9 6

£63 5 8

632 13 6

Do. proportional Exchange
on a bill of £150, ...

34 13 0

667 10 6

856 0 0

45 13 9

Carried over, Rs. 15,636 4 6

		RECEIPTS.	1868.	1867.
		Brought over, Rs.	17,285 9	■
V. BALL, Esq.				
Refund of the amount paid on the				
12th September, 1868, ..	1 0 0		1 0 0	
K. ROGHUNATH ROW.				
Refund of the amount paid on the				
31st August, 1868, ...	1 0 0		1 0 0	
W. IRVINE, Esq.				
Refund of the amount paid, ...	11 4 6		11 4 6	
D. WALDIE, Esq.				
Refund of the amount paid on the 6th				
July, 1868, ...	9 2 0		9 2 0	
E. T. ATKINSON, Esq.				
Refund of the amount, ...	1 0 0		1 0 0	
DR. BHAN DAJL				
Received on deposit, ...	12 8 0		12 8 0	
LT. J. BUTLER.				
Refund of the amount paid on the 31st				
October and 21st December, 1867,...	4 7 0		4 7 0	7 6 0
JAMES BRAMES, Esq.				
Refund of, ...	7 8 0		7 8 0	
BABU RAJENDRALALA MITRA.				
Refund of the paid on the 16th July,				
1867, ...	11 0 0		11 0 0	-
DR. F. STOLICZKA.				
Refund of the amount paid on the				
12th September, 1868, ...	1 8 0		1 8 0	
E. B. COWELL, Esq.				
Refund of the amount paid, ...	106 4 0		106 4 0	
CAPT. M. W. CAW.				
Received on deposit, ...	1 11 0		1 11 0	
COL. R. STRACHEY.				
Refund of the amount paid, ...	10 0 0		10 0 0	
J. D. TREMLETT, Esq.				
Refund of Postage Stamps, ...	0 2 0		0 2 0	
DR. J. MUIR.				
Received in deposit, ...	1,000 0 0		1,000 0 0	
			18,463 15 10	
		Carried over, Rs.	18,463 15 10	

DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 15,636 4 6

MESSRS. WILLIAMS AND NORGATE.

Paid Messrs. Gillanders, Arbuthnot and Co., as per draft, dated 8th July, 1868, £150, at 1-10 $\frac{1}{4}$ per rupee, ...	1,582	6	8		
Ditto by transfer to sale of Journal, ...	78	12	0		
Ditto ditto of Library, ...	17	15	6		
Ditto ditto of Bibliotheca Indica, (O. P. F.) ...	276	13	6		
	<u>1,955</u>	<u>15</u>	<u>8</u>	448	12 0

GOVERNMENT NORTH-WESTERN PROVINCES.

Paid Freight for sending Journal and Proceedings, ...	16	5	0		
	<u>16</u>	<u>5</u>	<u>0</u>	10	14 0

INDIAN MUSEUM.

Paid Freight for sending a parcel of Books to Messrs. Williams and Norgate, London, ...	1	12	0		
	<u>1</u>	<u>12</u>	<u>0</u>	12	12 0

BOPP STIFTUNG FUND.

Paid advertising charges, ...	4	14	6		
Ditto Postage Stamp for sending Circular, ...	4	12	6		
Refunded the amount to Babu R. Mitra, ...	203	5	0		
	<u>213</u>	<u>0</u>	<u>0</u>		

BAPTIST MISSION PRESS.

Paid to the Press, for printing charges on account of the Hon'ble Campbell, ...	47	8	0		
	<u>47</u>	<u>8</u>	<u>0</u>	5	0 0

MAJOR J. F. TENNANTS.

Paid Printing charges on 75 copies of Total Eclipse, ...	6	0	0		
	<u>6</u>	<u>0</u>	<u>0</u>		

MR. A. GROTE, PORTRAIT FUND.

Paid Postage Stamps, ...	15	14	0		
Ditto 200 Creamlaid Envelope, ...	1	12	0		
Ditto 16 Receipt Stamps, ...	1	0	0		
Ditto printing charges 150 copies of Circulars, ...	12	0	0		
Refunded the amount to Babu R. Mitra, ...	936	6	0		
	<u>967</u>	<u>0</u>	<u>0</u>		

ZOOLOGICAL GARDEN.

Paid printing charges, ...	16	0	0		
	<u>16</u>	<u>0</u>	<u>0</u>	1	14 0

MUSEUM CATALOGUE.

Catalogue binding, ...	18	0	0		
	<u>18</u>	<u>0</u>	<u>0</u>	754	2 9

V. BALL, Esq.

Paid to the Baptist Mission Press for printing charges, ...	1	0	0		
	<u>1</u>	<u>0</u>	<u>0</u>		

Carried over, Rs. 18,878 13 2

RECEIPTS.

Brought over, Rs. 18,463 15 10

BARU KEDARNATH BANERJEA.

Received from him on account of the
Library Books Sale, ..

...	7 0 0	
	<u> </u>	7 0 0

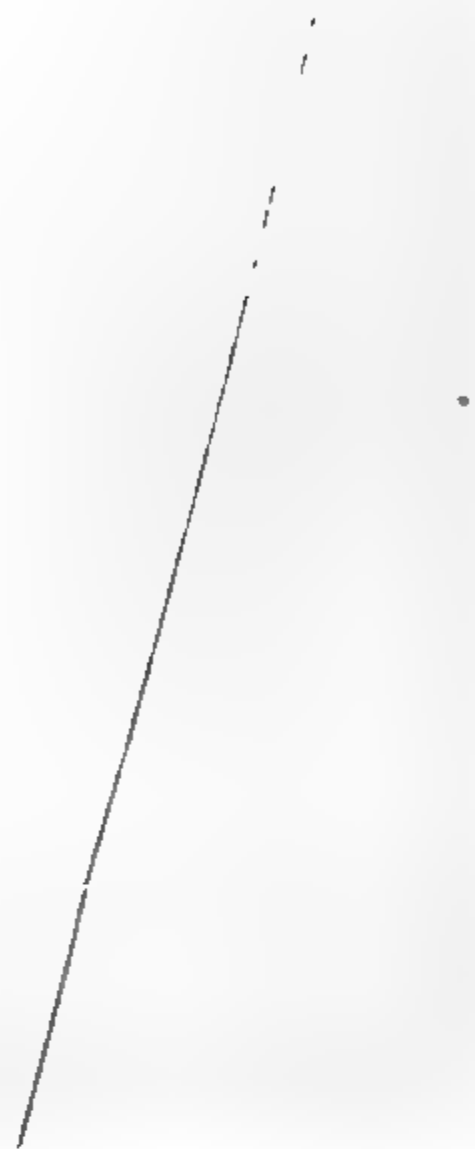
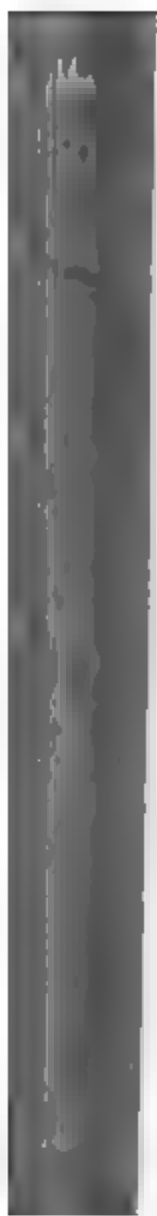
W. T. BLANFORD, Esq.

Refund of the amount paid,

...	6 0 0	
	<u> </u>	6 0 0

Carried over, Rs 18,476 15 10

DISBURSEMENTS.			1868.	1867.
Brought over, Rs. 18,878 13 2				
K. ROGHUNATH ROW.				
Paid packing charges, ...	...	1 0 0	1 0 0	
D. WALDIR, Esq.				
Paid to the Baptist Mission Press for printing charges, ...	...	9 2 0	9 2 0	
JAMES BEAMS, Esq.				
Paid Freight for sending Books to Monghyr, ...	...	1 1 0	1 1 0	3 2 0
BÁBU RAJENDRALÁLA MITRA.				
Paid to the Baptist Mission Press, for printing charges, ...	...	11 0 0		
Do. to Messrs. Williams & Norgate,...		6 0 0	17 0 0	
DR. F. STOLICZKA.				
Paid to the Baptist Mission Press, for printing charges, ...	...	1 8 0	1 8 0	
THE HON'BLE G. CAMPBELL.				
Paid to the Baptist Mission Press, for printing charges, ...	...	5 0 0	5 0 0	
W. L. WILSON, Esq.				
Paid Postage for sending Library Books, ...	...	0 7 0	0 7 0	
MAJOR C. H. STRUTT.				
Paid Postage Stamps for sending Journal, ...	...	2 6 0	2 6 0	
DR. G. KING.				
Paid Postage Stamps for sending Extra Copy and Chart, ...	...	0 6 0	0 6 0	
R. B. SMART, Esq.				
Paid Postage Stamps for sending Chart, ...	...	0 2 0	0 2 0	
LT. J. FORSYTH.				
Paid discount for Cashing 2 Bombay Currency Notes, ...	...	0 6 0	0 6 0	
DR. J. M. FLEMING.				
Paid Postage Stamps for sending Chart, ...	...	0 3 0	0 3 0	
DR. G. W. CLINE.				
Paid Postage Stamps for sending a Copy of Rules of the Asiatic Society, ...	...	0 3 0	0 3 0	
G. SHELVERTON, Esq.				
Paid discount for Cashing his draft, ...	...	0 5 9	0 5 9	
Carried over, Rs. 18,917 14 11				



DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 18,917 14 11

H. R. CARNAC, Esq.					
Paid discount for Cashing his draft,...	0	6	0		
	<hr/>			0	6 0
MAJOR-GENERAL A. CUNNINGHAM.					
Paid to the Baptist Mission Press, for printing charges, ...	2	0	0		
	<hr/>			2	0 0
SIR WILLIAM JONES' MONUMENT.					
Refunded the amount to Messrs. Llewelyn and Co., for repairing the Monument, ...	680	0	0		
	<hr/>			680	0 0
DR. T. ANDERSON.					
Paid to the Baptist Mission Press, for printing charges, ...	5	8	0		
	<hr/>			5	8 0
C. HORNE, Esq.					
Paid to the Baptist Mission Press, for printing charges, ...	7	2	0		
	<hr/>			0	7 0
					0 7 0
THE REV. M. A. SHERRING.					
Paid to the Baptist Mission Press, for printing charges, ...	2	10	0		
	<hr/>			2	10 0
H. BLOCHMANN, Esq.					
Paid to the Baptist Mission Press, for printing charges, ..	3	12	0		
Ditto Freight for sending Books to Messrs. Williams & Norgate, London,	2	0	0		
	<hr/>			5	12 0
THE REV. W. G. COWIE.					
Paid to the Baptist Mission Press, for printing charges, ...	6	6	0		
	<hr/>			6	6 0
DR. A. M. VERCHERE.					
Paid Postage Stamps for sending Li- brary Books, ...	1	2	0		
	<hr/>			1	2 0
M. MACANLIPPE, Esq.					
Paid Postage for sending Researches, Vol. 15, ...	0	3	0		
	<hr/>			0	3 0
BABU PROSONO DOOMAR TAGORE.					
Paid Messrs. Williams & Norgate, for distributing packets of Books in London, ...	12	8	0		
	<hr/>			12	8 0
MOULVIE ABDOOLLATEEF.					
Paid to the Baptist Mission Press, for printing charges, ...	1	8	0		
	<hr/>			1	8 0
W. T. BLANFORD, Esq.					
Paid to the Baptist Mission Press, for printing charges, ...	6	0	0		
	<hr/>			6	0 0
	<hr/>				
Carried over, Rs.				19,648	15 11

	RECEIPTS.	1868.	1867.
	Brought over, Rs. 18,476 15 10		
BALANCE OF 1867.			
In the Bank of Bengal, ...	...	3,487 12 1	
Cash in hand, ...	...	38 8 4	
		<u>3,526 4 5</u>	

Rs. 22,008 4 3

Examined,
Sd. PRATAPACHUNDRA GHOSHA,
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions excepted,
Sd. BUDDINATH BIRACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found correct
Sd. R. D. STEWART, } Auditors.
„ F. W. PETERSON. }

DISBURSEMENTS.	1868.	1867.
Brought forward, Rs. 19,648 15 11		

BALANCE.			
In the Bank of Bengal, viz.,			
Account-current Dr. J.			
Muir,	...	1,000	0 0
„ Asiatic So-	...	1,261	10 9
ciety,	...		
			2,261 10 9
Cash in hand,	...	...	92 9 7
			2,354 4 4
			Rs, 22,003 4 3

Examined, Sd. PRATÁPCHUNDRA GHOSHA, Asst. Secry. Asiatic Society, Bengal.	Errors and Omissions excepted, Sd. BUDDINATH BYSACK, Cash Keeper, Asiatic Society, Bengal.
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Examined and found correct, Sd. R. D. STEWART, „ F. W. PETERSON.	} Auditors.
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STATEMENT

Abstract of the Cash Account

RECEIPTS.		1866.	1867.
ORIENTAL PUBLICATIONS.			
Received by Sale of Bibliotheca,	Rs. 2,268 12 0		
Ditto by Subscription to ditto,	... 102 3 0		
Ditto by Sale of White Yajurveda,	... 456 14 3		
Ditto by Sale of Samaveda,	... 24 8 0		
Ditto by Sale of Atharveda,	... 32 8 0		
Refund of Postage Stamps,	... 47 7 0		
Ditto of Packing charges,	... 6 2 0		
Ditto of Freight,	... 0 2 0		
		2,938 7 3	2,558 12 9
GOVERNMENT ALLOWANCE.			
Received from the General Treasury			
at 500 Rs. per month,...	... 6,000 0 0	6,000 0 0	6,000 0 0
VESTED FUND.			
Received Interest on the Government			
Securities from the Bank of Bengal,	348 4 0		
Ditto by Sale of Government Security,	3,500 0 0		
Ditto Premium by Sale of ditto,	... 529 6 0		
Ditto Interest by Sale of ditto,	... 34 13 1		
		4,410 6 1	442 8 0
CUSTODY OF ORIENTAL WORKS.			
Saving of Salary,	... 14 7 6	14 7 6	
ASIATIC SOCIETY OF BENGAL.			
Received on Loan,	... 183 5 6		
Ditto by transfer on account of White Yajurveda, &c., purchased through Messrs. Williams and Norgate, £50 12 6,	506 4 0		
Do. do. Advertising Bibliotheca Indica, £20 18 0,	9 0 0		
Do. do. freight and packing charges, £11 15 2,	117 9 6		
Do. do. proportional freight on a draft of £150 0 0,	34 13 0		
	667 10 6	651 0 0	45 13 9
LUTCHMEER SUNDRA RAMANAH.			
Received on deposit,	... 39 8 0	39 8 0	
P. SWAMINATHA AGAR.			
Received on deposit,	... 14 0 0		
Ditto on account of Bibliotheca Indica,	... 3 8 0	17 8 0	
Carried over, Rs. 14,271 4 0			

No. 2.

Oriental Fund for 1868.

DISBURSEMENTS.

			1868.	1867.
ORIENTAL PUBLICATIONS.				
Paid Commission on the Sale of				
Books,	Rs.	292 0 3		
Frieght,		218 5 6		
Packing Charges,		44 1 0		
Purchase of Postage Stamps,		61 15 0		
Ditto of White Yajurveda, &c.,		506 4 0		
Advertising Charges,		9 0 0		
Proportional exchange on a draft £150		34 13 6		
Purchase of Stationery,		9 11 0		
Petty Charges,		3 9 6		
		<u> </u>	1,179 11 9	674 2 3
VESTED FUND.				
Paid Commission to the Bank of Ben-				
gal for drawing Interest on the				
Government Securities,		0 13 10		
Ditto Commission and Brokerage on				
Sale of the Government Security,		13 2 0		
Ditto a receipt Stamp,		0 1 0		
		<u> </u>	14 0 10	1 1 8.
CUSTODY OF ORIENTAL WORKS.				
Paid Salary of the Librarian,		360 0 0		
Establishment,		654 0 0		
Book-binding,		197 0 0		
Fee paid to the Bank of Bengal for				
Stamping Cheques,		3 2 0		
Purchase of Stationery,		48 14 6		
Ditto of blank Books,		14 8 0		
Printing charges,		69 6 0		
Books cleaning,		47 7 0		
Purchase of two Book Cases and				
1 Table,		66 1 6		
Subscription to the Satya Brata Sama				
Sramy,		16 0 0		
Petty charges,		41 10 0		
		<u> </u>	1,518 5 0	983 5 5
LIBRARY.				
Purchase of MSS. Books, &c.,		551 10 0		
Train hire for ditto,		4 6 3		
Postage for ditto,		4 8 0		
Binding Sanskrit MSS. purchased from				
Benares,		42 14 9		
		<u> </u>	603 7 0	136 12 0
COPYING MSS.				
Copying charges,		37 3 0		
		<u> </u>	37 3 0	33 12 0
Carried over, Rs. 3,352 11 7				

RECEIPTS.				1868.	1867.
Brought over, Rs. 14,271 4 0					
DAMODARA JETTA.					
Received by Sale of White Yajurveda,	48	0	0		
Ditto on account of Bibliotheca Indica,	240	0	0		
				288	0 0 611 0 0
PUNDITA RADHA KIRSEN.					
Received on deposit, ...	0	8	0		
				0	8 0
K. ROGHUNATHA ROW.					
Received on account of Bibliotheca Indica, ...	87	12	6		
Refund of Freight, ...	2	14	0		
				90	10 6 49 8 0
BARU KARTIC CHANDRA CHOWDURY.					
Received on deposit, ...	0	10	0		
				0	10 0
A. NARAINI ROW.					
Refund of Postage, ...	0	14	0		
				0	14 0 25 7 0
BARU KEDARNATH BANERJEE.					
Received on account of Bibliotheca Indica, ...	93	8	0		
				93	8 0
BARU BROJO BHUSUN DASS.					
Received on account of Bibliotheca Indica, ...	20	0	0		
				20	0 0 50 0 0
DOWHILRAM DOOLIE CHAND & Co.					
Received on deposit, ...	5	0	6		
				5	0 6
V. B. SOOBIAH.					
Received on account of Bibliotheca Indica, ...	10	0	0		
				10	0 0 1 9 6
SADA SUREN LALA.					
Received on deposit, ...	42	8	0		
				42	8 0
REV. K. M. BANERJEE.					
Received on account of Bibliotheca Indica, ...	13	6	0		
				13	6 0
THE HON'BLE D. F. McLEOD.					
Received on deposit, ...	0	7	0		
				0	7 0
J. YAVIER, Esq.					
Received on deposit, ...	1	8	0		
Ditto on account of Bibliotheca Indica, ...	59	4	0		
				60	12 0
PUNDITA DAMODRA BALLABH.					
Received on account of Bibliotheca Indica, ...	2	4	0		
				2	4 0 4 14 0
Carried over, Rs. 14,899 12 10					

DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 3,352 11 7

ASIATIC SOCIETY OF BENGAL.

Paid on account of Loan, ...	12 15 2		
Ditto by transfer by Sale of the Bibliotheca Indica, through Messrs. Williams and Norgate, £27 13 8, ...	276 13 6		
Ditto in part payment of £63 15 8, for White Yajurveda, ...	200 0 0		
		489 12 8	165 10 11

LUTCHMEE SUNDRA RAMANAH.

Paid Postage Stamps for sending Bibliotheca Indica, ...	4 15 6		
		4 15 6	

P. SWAMANATHA JYER.

Paid Postage Stamps for sending Bibliotheca Indica, ...	1 13 0		
		1 13 0	

DAMOODARA JETTA.

Paid freight for sending Books, ...	17 8 6		
Ditto packing charges for ditto, ...	4 0 9		
Ditto by transfer to the Bibliotheca Indica, ...	442 8 6		
		464 1 9	329 14 9

K. ROGHUNATHA ROW.

Paid freight for sending Books, ...	2 14 0		
Ditto by transfer to the Bibliotheca Indica, ...	81 12 8		
		84 10 3	

A. NARAIN ROW.

Paid Bearing Postage on his letter, ...	0 1 0		
Ditto Postage for sending Bibliotheca Indica, ...	0 14 0		
Ditto by transfer to the Bibliotheca Indica, ...	4 11 0		
		5 10 0	20 12 0

DOWHITRAM DOOLIE CHAND & Co.

Refunded the amount to the School Book Society, ...	5 1 6		
		5 1 6	

SADA SUKH LALA.

Paid freight and packing charges for sending Books, ...	4 5 0		
Ditto by transfer to the Bibliotheca Indica, ...	38 3 0		
		42 8 0	

REV. K. M. BANERJEE.

Paid by transfer to the Bibliotheca Indica, ...	13 6 0		
		13 6 0	

J. W. McCRINDLE, Esq.

Paid freight, &c., for sending Bibliotheca Indica, ...	2 13 0		
		2 13 0	

Carried over, Rs. 4,467 7 3

xxxiv

RECEIPTS.	1868.	1867.
Brought over, Rs. 14,899 12 10		

Carried over, Rs. 14,899 12 10

DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 4,467 7 3

POEMS OF CHAND.

Paid Postage Expenses on a Bangly Parcel of the MSS.,	...	13	8	0			
					13	8	0

PALI GRAMMAR.

Paid Rev. F. Mason, for Editing charges, ..	...	912	0	0			
Ditto Premium for getting a draft in his favor, ...	...	10	7	0			
Ditto Printing paper for the Pali Grammar including charges for sending ditto, ...	...	225	15	3			
Ditto Printing &c. for 500 Copies of Covers of ditto, No. 123 and freight for ditto, ...	...	25	8	0			
Ditto Freight, ...	...	4	12	0			
Ditto Petty charges, ...	...	2	5	0			
					1,180	15	3

AIN í AKBARI.

Paid Salary to Moonshee, ...	...	360	0	0			
Ditto Printing charges, ...	...	1,636	12	0			
Ditto 6 Reams of 26 lbs. Printing Royal Paper, ...	...	78	0	0			
					2,074	12	0
					426	0	0

BADSHAH NAMAH.

Editing and Printing charges, ...	...	503	8	0			
					503	8	0
					3,796	0	0

TARIKHI BADAONI.

Editing and Printing charges, ...	...	2,113	0	0			
					2,113	0	0

TAITTIRYA ARANYAKA UPANISHAD.

Paid Freight and Banghy Expenses for sending MSS., ...	...	4	9	0			
Ditto Editing charges, ...	...	144	0	0			
Ditto Printing charges, ...	...	672	0	0			
					820	9	0
					368	0	0

ALMAGIR NAMAH.

Paid Editing and Printing charges, ...	...	200	0	0			
					200	0	0
					584	0	0

SANKARA VIJAYA.

Correcting 121 pages of ditto, ...	...	121	0	0			
Printing charges, ...	...	237	2	0			
					358	2	0
					80	0	0

SANHITA OF THE BLACK YAJURVEDA.

Printing charges, ...	...	364	14	0			
					364	14	0

SRAUTA SUTRA OF ASWALAYAND.

Printing charges, ...	...	1,111	4	0			
					1,111	4	0

MIMANSA DARSANA.

Editing charges, ...	...	96	0	0			
Printing charges, ...	...	235	2	0			
					331	2	0
					333	0	0

Carried over, Rs. 13,539 1 6

RECEIPTS.		1868.	1867.
Brought over, Ra.		14,899 12 10	
J. W. McCrindle, Esq.			
Received on account of Bibliotheca			
Indica,	...	33 5 6	
		<hr/>	33 5 6
PALI GRAMMAR.			
Refund of the amount from the			
Rev. F. Mason for paper used by him,		126 13 10	
Ditto ditto for Pali Type,	...	54 1 6	
		<hr/>	180 15 4
			<hr/>
			15,114 1 8
BALANCE OF 1867.			
In the Bank of Bengal,	...	...	912 15 6
Total, Ra.		15,427 1 3	
		<hr/>	
Examined,		Errors and Omissions Excepted,	
Sd. PRATAPACHUNDRA GHOSHA.		Sd. BUDDINATH BYRACK,	
Asst. Secy.		Cash Keeper,	
Asiatic Society, Bengal.		Asiatic Society, Bengal.	
Examined and found correct,			
		Sd. R. D. STEWART,	} Auditors.
		" F. W. PETERSON.	

DISBURSEMENTS. 1868. 1867.
Brought over, Rs. 13,539 1 6

ASWALAYAS GRIHYA SUTRA.

Printing charges, 	672	0	0		672	0	0	100	0	0

TAITTIREYA BRAHMANA.

Printing charges, 	224	0	0		224	0	0	368	0	0

MUNTAKHAB ALLUBAB, OF KHAPEKHAN.

Editing and Printing charges, 	876	0	0		876	0	0			

15,311 1 6

BALANCE.

In the Bank of Bengal, 	115	15	8		115	15	8			

Total Rs. ... 15,427 1 2

Examined,
Sd. PRATÁPACHUNDRA GHOSHA.
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYSACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found correct,
Sd. R. D. STEWART, }
„ F. W. PETERSON, } Auditors.

STATEMENT No. 4.

Shewing the Assets and Liabilities of the Oriental Publication Fund of 1868.

ASSETS.		LIABILITIES.	
	1867.		1867.
In the Bank of Bengal,	Rs. 312 15 6	Establishment and Contingent charges, 1868,	Rs. 90 0 0
Government Securities,	8,500 0 0	Baptist Mission Press and printing charges, ..	2,000 9 0
Bibliotheca Sale and Subscription, ..	866 2 3	Kubeeroodeen, editing and printing charges,	876 0 0
Government allowance for December, 1868,	500 0 0	Asiatic Society of Bengal,.....	246 6 2
Ditto due for Ain í Akbari,	5,000 0 0		
Total, Rs. 11,288 6 5	10,178 1 9	Total, Rs. 3,212 6 0	3,410 13 3

Examined, Sd. PRATÁPACHUNDRA GHOSHA, <i>Asst. Secy.</i> <i>Asiatic Society, Bengal.</i>	Errors and Omissions Excepted, Sd. BUDDYNATH BYSACK, <i>Cash Keeper.</i> <i>Asiatic Society, Bengal.</i>	Examined and found correct, Sd. R. D. STEWART, " F. W. PETERSON, } <i>Auditors.</i>
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144

